

Larimore

FISH POPULATIONS IN LAKE MARTIN AND ALABAMA STREAMS

1. LAKE MARTIN
2. TOMBIGBEE RIVER
3. WARRIOR RIVER FORKS
WEST BRANCH OF SIPSEY
BRUSHY FORK OF SIPSEY
MULBERRY FORK
LOCUST FORK
4. CHOCCOLOCCO CREEK

REPORT TO ALABAMA WATER IMPROVEMENT COMMISSION

BY

FISHERIES LABORATORY
ALABAMA POLYTECHNIC INSTITUTE
AGRICULTURAL EXPERIMENT STATION

AND

ALABAMA DEPARTMENT OF CONSERVATION

DECEMBER, 1959



ILLINOIS NATURAL
HISTORY SURVEY

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INTRODUCTION

The fish population surveys reported herein were conducted by the Fisheries Staff of Alabama Polytechnic Institute in cooperation with the Alabama Department of Conservation.

Surveys on Lake Martin were made to measure the effect of the introduction of threadfin shad upon the established fish population.

Surveys on the Tombigbee River were made under contract for the Alabama Water Improvement Commission to measure the effect of a fish kill in 1958 on the fish population in 1959.

Surveys were made on the Sipsey, Mulberry, and Locust Forks of the Warrior River to determine the fish populations in areas to be impounded by dams of the Alabama Power Company.

Surveys were made on Choccolocco Creek for the Alabama Water Improvement Commission to determine the effects of the Anniston Sewage Disposal installation on fish in formerly polluted areas.

NAMES OF FISHES

<u>Common Name</u>	<u>Scientific Name</u>
Alabama shad	<u>Alosa alabamae</u>
Alabama shiner	<u>Notropis callistius</u>
American eel	<u>Anguilla rostrata</u>
Atlantic needlefish	<u>Strongylura marina</u>
Bigeye chub	<u>Hybopsis amblops</u>
Blacktail redhorse	<u>Moxostoma poecilurum</u>
Blacktail shiner	<u>Notropis venustus</u>
Black bullhead	<u>Ictalurus melas</u>
Black crappie	<u>Pomoxis nigromaculatus</u>
Blue catfish	<u>Ictalurus furcatus</u>
Bluntnose minnow	<u>Pimephales notatus</u>
Bluegill	<u>Lepomis macrochirus</u>
Bullhead minnow	<u>Pimephales vigilax</u>
Carp	<u>Cyprinus carpio</u>
Carpsucker species No. 1	<u>Carpiodes thompsoni</u>
Carpsucker species No. 2	<u>Carpiodes sp.</u>
Central weed shiner	<u>Notropis roseus</u>
Channel catfish	<u>Ictalurus punctatus</u>
Common shiner	<u>Notropis cornutus</u>
Creek chub	<u>Semotilus atromaculatus</u>
Creek chubsucker	<u>Erimyzon oblongus</u>
Darter species	<u>Percina sp.</u>
Emerald shiner	<u>Notropis atherinoides</u>
Flathead catfish	<u>Pilodictus olivaris</u>

NAMES OF FISHES (Continued)

<u>Common Name</u>	<u>Scientific Name</u>
Freckled madtom	<u>Schilbeodes nocturnus</u>
Freshwater drum	<u>Aplodinotus grunniens</u>
Fundulus	<u>Fundulus sp.</u>
Gizzard shad	<u>Dorosoma cepedianum</u>
Goldfish	<u>Carassius auratus</u>
Golden redhorse	<u>Moxostoma erythrurum</u>
Green sunfish	<u>Lepomis cyanellus</u>
Gulf Coast madtom	<u>Schilbeodes leptacanthus</u>
Highfin carpsucker	<u>Carpionodes velifer</u>
Largemouth bass	<u>Micropterus salmoides</u>
Logperch	<u>Percina caprodes</u>
Longear sunfish	<u>Lepomis megalotis</u>
Longnose gar	<u>Lepisosteus osseus</u>
Madtom	<u>Schilbeodes sp.</u>
Mimic shiner	<u>Notropis volucellus</u>
Mooneye	<u>Hiodon tergisus</u>
Northern rockbass	<u>Ambloplites rupestris rupestris</u>
Orangespotted sunfish	<u>Lepomis humilis</u>
Paddlefish	<u>Polyodon spathula</u>
Pugnose minnow	<u>Opsopoeodus emiliae</u>
Quillback carpsucker	<u>Carpionodes cyprinus</u>
Redear sunfish	<u>Lepomis microlophus</u>
Riffle suckermouth minnow	<u>Phenacobius catostomus</u>
River redhorse	<u>Moxostoma carinatum</u>
Silverband shiner	<u>Notropis illecebrosus</u>

NAMES OF FISHES (Continued)

<u>Common Name</u>	<u>Scientific Name</u>
Silver chub	<u>Hybopsis storeriana</u>
Silverstripe shiner	<u>Notropis stilbeus</u>
Silvery minnow	<u>Hybognathus nuchalis</u>
Skipjack herring	<u>Alosa chrysochloris</u>
Smallmouth buffalofish	<u>Ictiobus bubalus</u>
Southern rockbass	<u>Ambloplites rupestris ariommus</u>
Speck darter	<u>Etheostoma stigmaeum</u>
Speckled chub	<u>Hybopsis aestivalis</u>
Spotted bass	<u>Micropterus punctulatus henshalli</u>
Spotted gar	<u>Lepisosteus productus</u>
Spotted sucker	<u>Minytrema melanops</u>
Stoneroller	<u>Campostoma anomalum</u>
Tadpole madtom	<u>Schilbeodes gyrimus</u>
Threadfin shad	<u>Dorosoma petenense</u>
Walleye	<u>Stizostedion vitreum</u>
Warmouth	<u>Chaenobryttus coronarius</u>
White bass	<u>Roccus chrysops</u>
White crappie	<u>Pomoxis annularis</u>
Yellowbelly sunfish	<u>Lepomis auritus</u>
Yellow bass	<u>Morone interrupta</u>
Yellow bullhead	<u>Ictalurus natalis</u>

LAKE MARTIN FISH POPULATION SURVEYS

Lake Martin was sampled July 14 and 15, 1959,
in an open-water area and in a cove. Following are
the descriptions of the samples and pie charts giving
the composition of these populations, with the percentage
of harvestable fishes indicated by the shaded areas.

Lake Martin, Young's Landing

Open Water Sample
Sample No. 1

July 14, 1959

This sample was 1 acre with an average depth of 27 feet and a maximum depth of 62 feet. Ten gallons of Noxfish was applied between 7:20 A. M. and 7:40 A. M. in concentric circles over the sample area. The second day pickup is included in this sample.

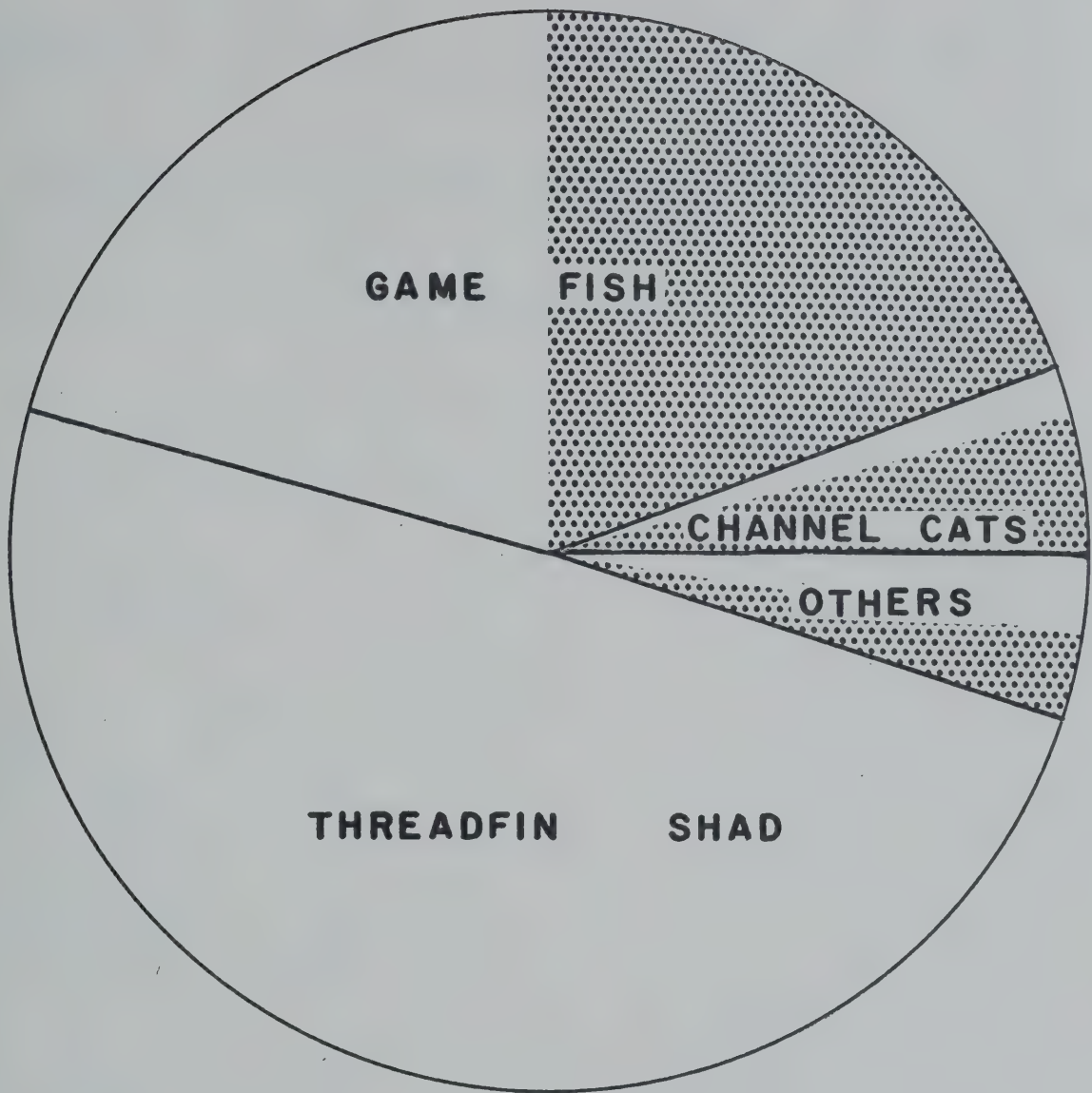
Total weight of fish per acre = 82.1 pounds

F/C = 4.9

$A_T = \cancel{23.9} \text{ } 26.2$

E Values:

Channel catfish	5.6
Largemouth bass	7.6
Spotted bass	6.8
White bass	2.6
Bluegill	16.1
Green sunfish	4.1
Threadfin shad	49.6
Other	<u>7.6</u>
Total	100.0



LAKE MARTIN, YOUNG'S LANDING

SAMPLE NO. 1

OPEN WATER

Lake Martin, Young's Landing

Cove Sample
Sample No. 2

July 16, 1959

This sample area was 2.2 acres with an average depth of 20 feet.
Five gallons of Chemfish and ten gallons of Noxfish were applied from 9:30
A. M. to 10:15 A. M. The second day pickup is included in this sample.

Total weight of fish = 346.4 pounds

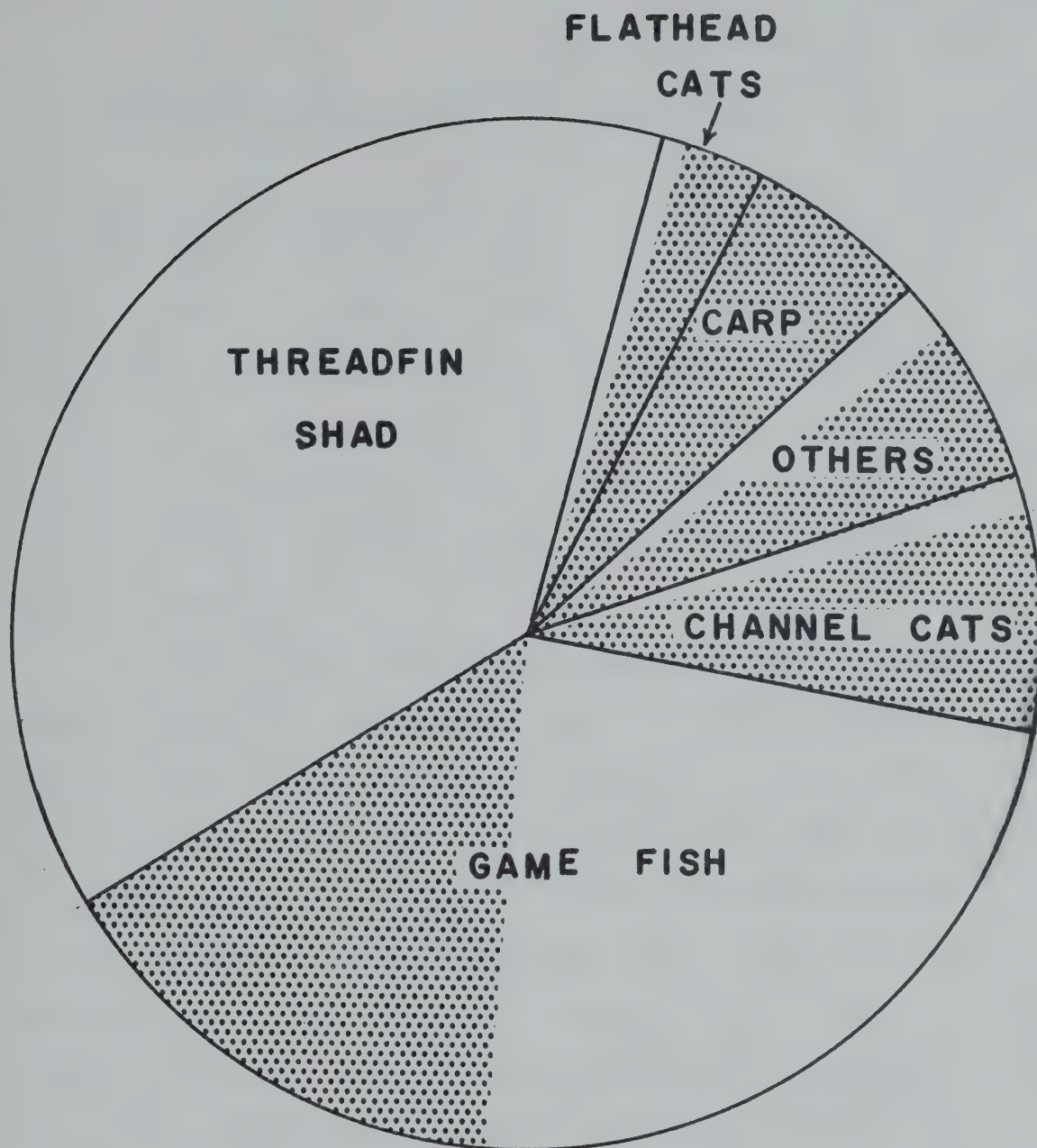
Pounds of fish per acre = 157.45

F/C = 6.26

A_T = 29.8 34.6

E Values:

Channel catfish	8.1
Flathead catfish	3.1
Largemouth bass	1.2
Spotted bass	5.6
White bass	2.1
Black crappie	2.0
White crappie	5.9
Bluegill	15.8
Green sunfish	4.0
Carp	5.7
Threadfin shad	37.9
Other	<u>8.6</u>
Total	100.0



LAKE MARTIN, YOUNG'S LANDING

SAMPLE NO. 2

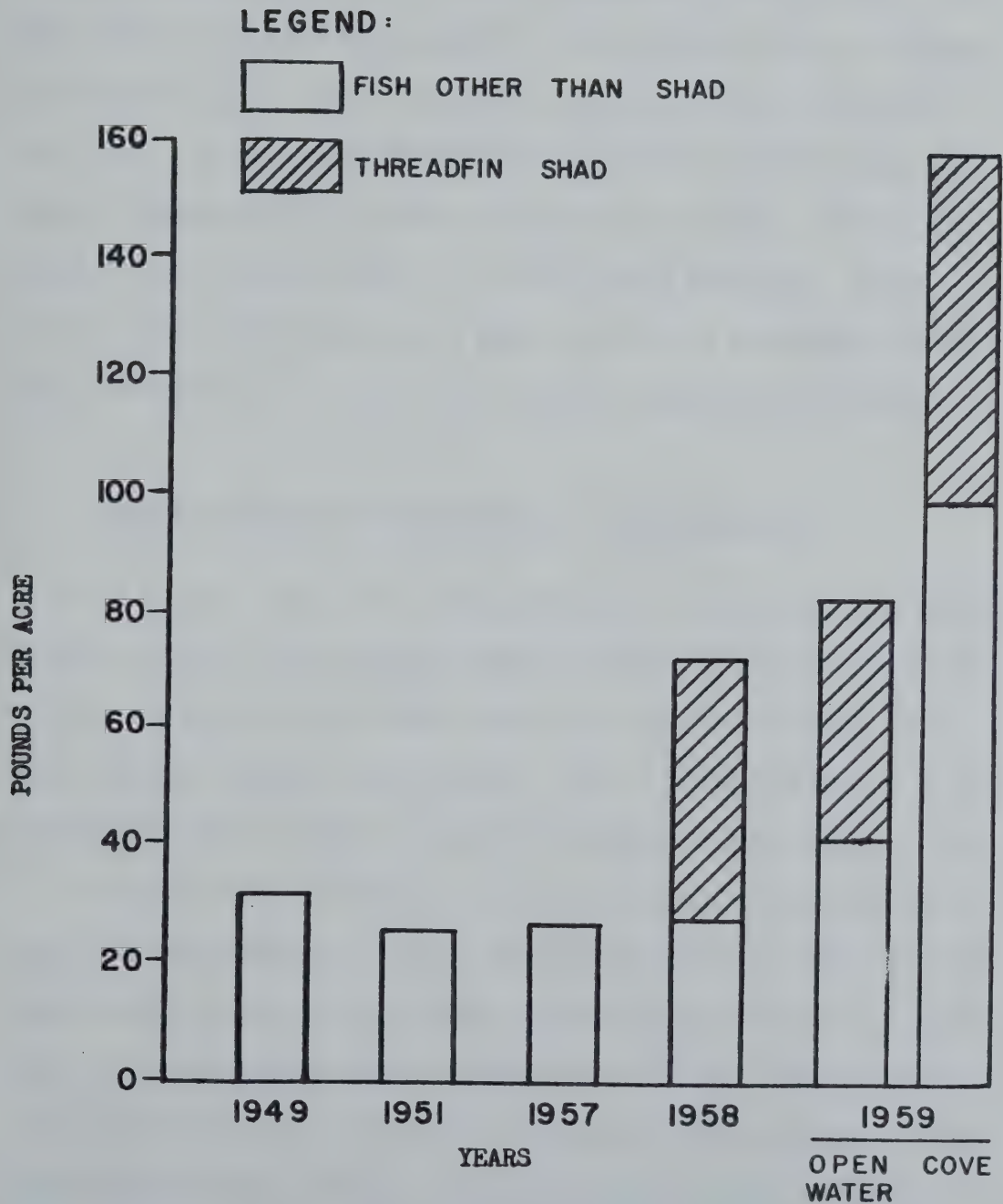
COVE

The Effect of the Addition of Threadfin Shad

The fish population of Lake Martin was first sampled in October, 1949. Two additional samples were taken in July of 1951. In 1957, the decision was made to add threadfin shad to the lake. It was anticipated that the plankton-feeding shad would occupy an ecological niche in the lake hitherto not being utilized, and would provide an added source of small fish for the piscivorous fishes in the population, without competing with forage fish already present.

Threadfin shad were added to the population in October, 1957. Figure 1 presents population data showing the entrance of the threadfin shad into the population and their role in the second year after being added. These data suggest that the shad have established themselves in Lake Martin without depressing the production of other fish. The average pounds of all fishes per acre increased from 26.9 in 1957, to 71.5 pounds per acre in 1958; however, 44.6 pounds of threadfin shad accounted for practically 100 percent of the increase. In 1959, the samples estimated the shad at 59.6 pounds per acre in the cove and 40.7 pounds in open water, with an average of 50.1 pounds, a slight increase over 1948. It thus appears that shad have reached their maximum potential and little increase may be expected in the future. The effect of the introduction of shad on the standing crop and upon the more important species will be discussed in the following sections.

Figure 1. Pounds of fish per acre in samples from Lake Martin 1949 to 1959. The 1951 and 1957 bars represent an average of two samples.



Effect of Shad on the Standing Crop

Table 1 gives the average standing crops of fishes in Lake Martin from 1949 to 1959, as estimated by rotenone sampling. Prior to the introduction of shad, from 1949 to 1959, the standing crop of fish varied between 24.0 and 31.5 pounds of fish per acre. In 1958, only one sample was taken, but this indicated that no change had occurred in the total weight of standing crop of fish other than shad. In 1959, the average of 66.2 pounds standing crop per acre of fishes other than shad indicated an increase, but the two samples taken varied from 41.3 to 97.8 pounds per acre. It is evident that additional samples must be taken to accurately determine the effect of shad upon the standing crop of native fishes.

Effect of Shad on Other Fishes in the Population

The primary reason for adding threadfin shad to the Lake Martin population was to increase the weight of small fish available to the piscivorous fishes such as the spotted and largemouth bass, white bass, channel catfish, and crappie. Table 2 lists the pounds of all piscivorous fish per acre in each of the samples from 1949 to 1959.

There is evidence that the total piscivorous fish are benefiting from the addition of shad. It might be expected that the 1958 sample would reveal little, if any, effect of the addition of shad. Small shad had probably hatched prior to or as early as all of the young-of-the-year piscivorous fish present in the population. This would mean that few, if any, of these young fish would be able to

Table 1. The Average Standing Crop of Fish
in Lake Martin from 1949 to 1959.

Date	Number of samples taken	Number acres sampled	Pounds of fish per acre (Excluding shad)	Pounds of shad per acre
October 21, 1949	1	3.0	31.5	0.0
July 26, 1951	2	4.0	25.4 ¹	0.0
August 15, 1957	2	3.0	26.4 ¹	0.0
October 2, 1958	1	1.0	26.9	44.6
July 14, 1959	2	3.2	66.2 ¹	50.1 ¹

¹An average of two samples.

Table 2. Pounds of Piscivorous Fish per Acre in Lake Martin from 1949 to 1959.

Sample	Piscivorous fish (Pounds per acre)
1949	8.1
1951 (cove)	8.6
1951 (open-water)	9.2
1957 (open-water)	4.1
1957 (open-water)	8.4
1958 (open-water)	9.5
1959 (open-water)	14.1
1959 (cove)	21.3

utilize the first crop of young shad; therefore, young-of-the-year piscivorous fish would be faced with primarily the same food problems that they faced prior to the addition of the shad. The only increase in weight of piscivorous fish expected in 1958, would have been as a result of increased growth rate of the fish large enough to eat the first hatch of young shad.

Increased production of piscivorous fishes such as the spotted bass and largemouth bass, the white bass, and crappie, would be expected only when enough young-of-the-year fish survived through their first winter to effectively utilize the spring hatch of shad. This probably accounts for the slightly higher pounds of piscivorous fish in July of 1959. Probably, a few more fish survived the winter of 1958 than in 1957, but probably still not enough to effectively utilize the shad.

The changes in the population composition over the 10-year period, are shown in Table 3, which gives the population values; and Table 4, which gives the E values for all species. Following are Figures 2 to 8 giving the changes in pounds per acre for largemouth bass, spotted bass, white bass, crappie, channel catfish, flathead catfish, and bluegills for the period before and after the addition of shad in October, 1957.

Table 3. Some Population Values from Lake Martin.

(Black dividing line indicates time of stocking shad).

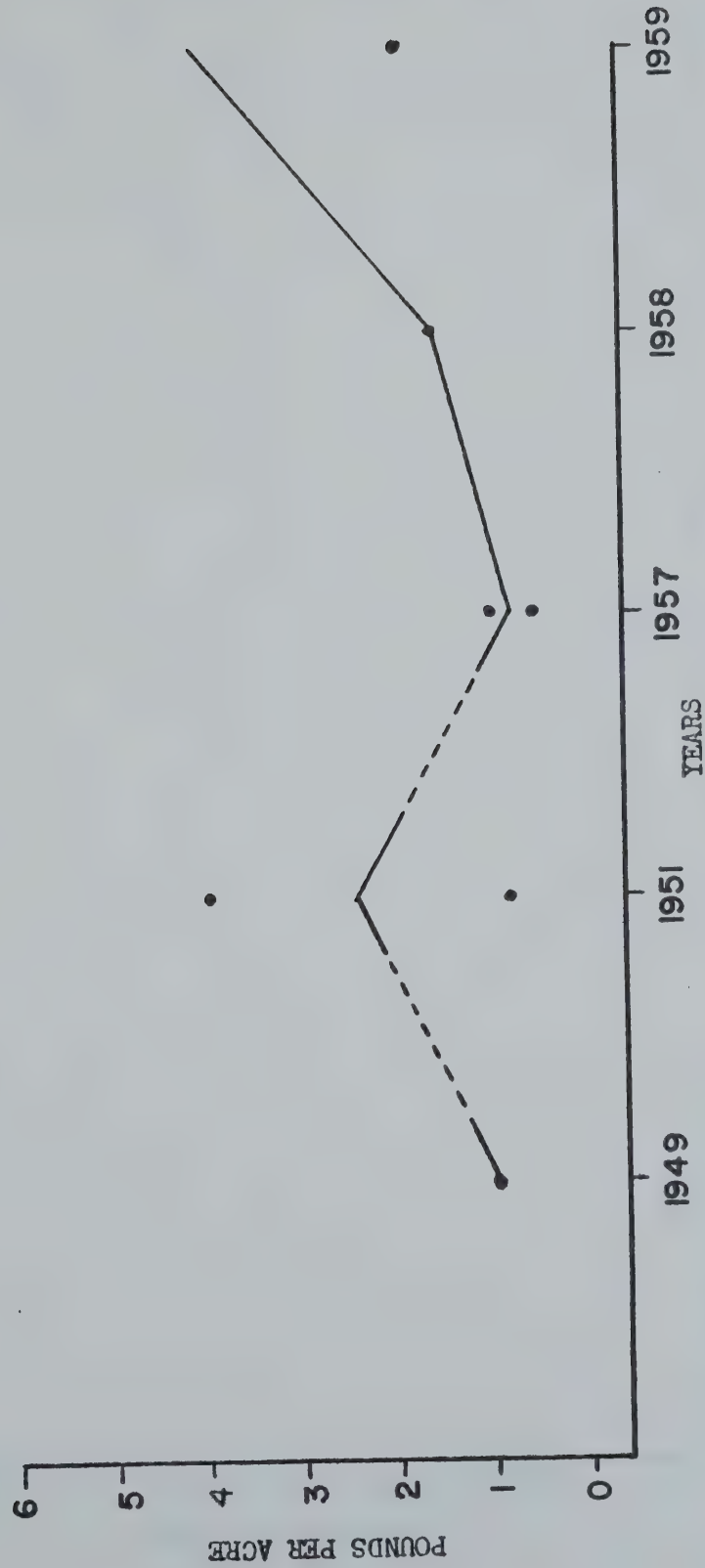
Sample	F/C	A_T^H	A_T^N	A_T	Fish per acre Pounds
1949	2.9	29.1	41.7	70.8	31.5
1951-Cove	2.1	33.6	0.0	33.6	26.8
1957-Open water	1.6	27.9	0.0	27.9	24.0
1957-No. 1	4.7	21.4	36.9	58.2	24.4
1957-No. 2	2.5	19.9	2.7	22.6	29.5
1958	6.5	11.4	0.0	11.4	71.5
1959-Open water	4.89	23.7	2.4	26.12	82.0
1959-Cove	6.46	24.3	10.3	34.76	157.5

Average before shad	2.8	26.4	16.3	42.6	27.0
Average after shad	5.9	19.8	4.2	24.1	103.7

Table 4. E Values for Various Species at Lake Martin.

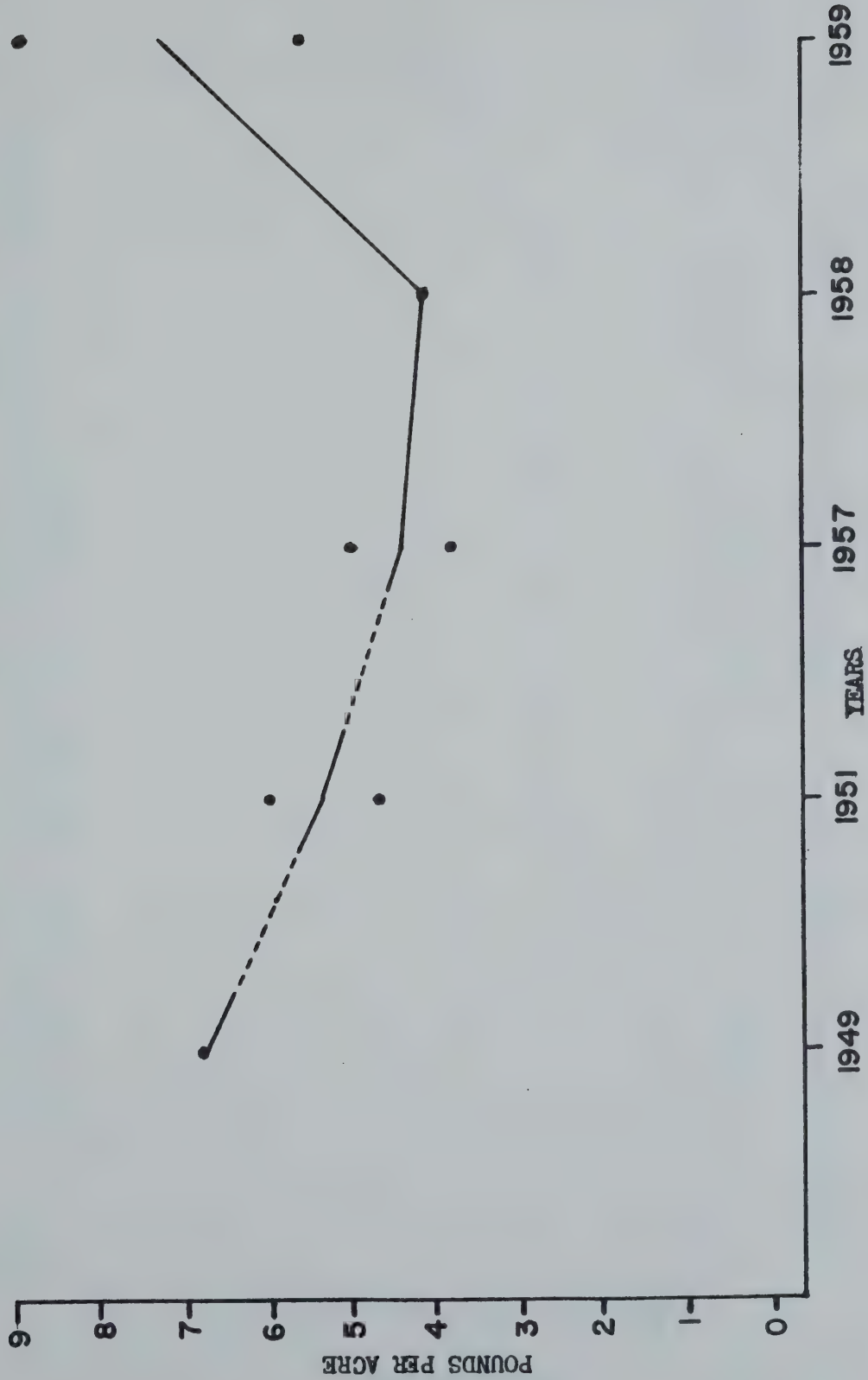
Species	1949	<u>1951</u>		<u>1957</u>		1958	<u>1959</u>		<u>Average</u>	
		Cove	Open Water	No.1	No.2		Open Water	Cove	Before shad	After shad
Spotted bass	21.6	17.7	25.0	16.4	16.8	5.7	6.8	5.7	19.5	6.1
Largemouth bass	3.0	14.4	3.3	0.7	1.5	2.1	7.6	1.2	4.6	3.6
Bluegill	11.9	38.0	39.5	15.6	20.8	13.8	16.1	15.8	25.2	15.2
Channel catfish	13.6	22.4	11.4	1.8	24.1	2.4	5.5	8.1	14.7	5.7
Flathead catfish	1.2	0.02	0.8	3.6	3.2	4.3	0.0	3.1	1.8	2.5
Threadfin shad	0.0	0.0	0.0	0.0	0.0	62.4	49.6	37.9	0.0	49.9
Warmouth	0.5	1.0	0.2	0.04	0.4	0.08	0.1	1.5		
Green sunfish	1.1	1.5	6.3	4.0	1.2	1.1	4.0	4.0		
Spotted sucker	37.6	0.0	0.0	0.0	0.0	0.0	0.0	2.1		
Longear sunfish	0.3	0.1	0.0	5.8	2.6	1.3	1.3	0.3		
Orange spotted sunfish	0.1	0.1	0.4	0.04	0.02	0.0	0.0	0.1		
Shellcrackers	0.06	0.07	0.0	1.2	0.5	T	1.3	0.04		
Logperch	0.8	0.04	1.1	2.2	0.4	2.0	1.8	1.4		
Yellow bullhead	0.0	0.11	0.0	0.0	0.0	0.0	0.0	0.02		
Carp	4.1	0.0	0.0	0.0	0.0	0.0	0.0	5.7		
White bass	0.0	0.05	9.6	0.4	10.2	1.6	2.7	2.1	5.1	2.1
White crappie	1.9	0.0	0.8	0.0	1.9	0.8	T	5.9	0.9	2.2
Black crappie	0.0	0.0	0.0	0.0	0.0	1.2	0.0	2.0	0.0	1.0
All minnows	2.2	4.4	1.5	2.3	2.4	1.1	0.6	0.1		
Blacktail redhorse	0.0	0.0	0.0	41.2	13.8	0.0	2.4	2.9		
Other sunfish	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0		
Madtom	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0		

Figure 2. Largemouth Bass: Pounds per acre in Lake Martin before and after the addition of threadfin shad in October, 1957. The circles indicate the results of each sample and the line represents the averages.



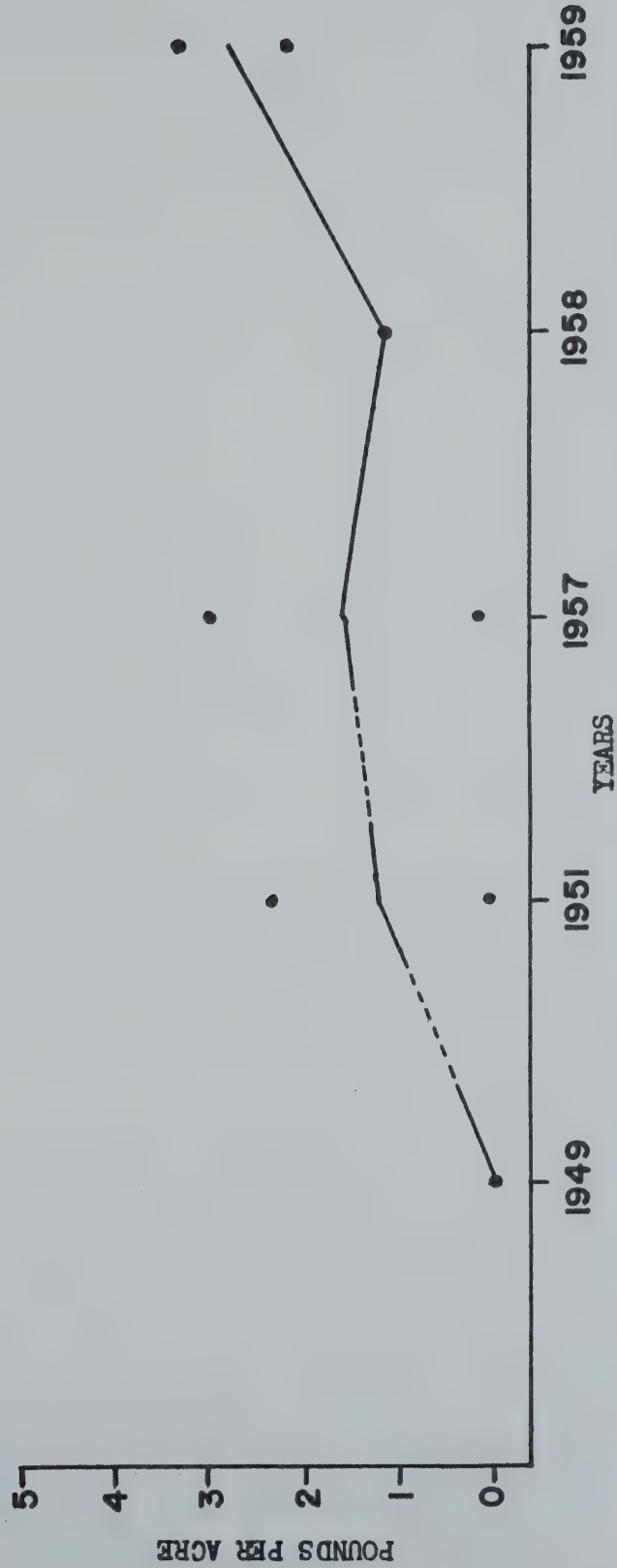
The pounds of bass per acre would appear to be increasing slightly following the addition of shad, but the variation between samples is too great for definite conclusions to be drawn.

Figure 3. Spotted Bass: Pounds per acre in Lake Martin before and after the addition of threadfin shad in October, 1957. The circles indicate the results of each sample and the line represents the averages.



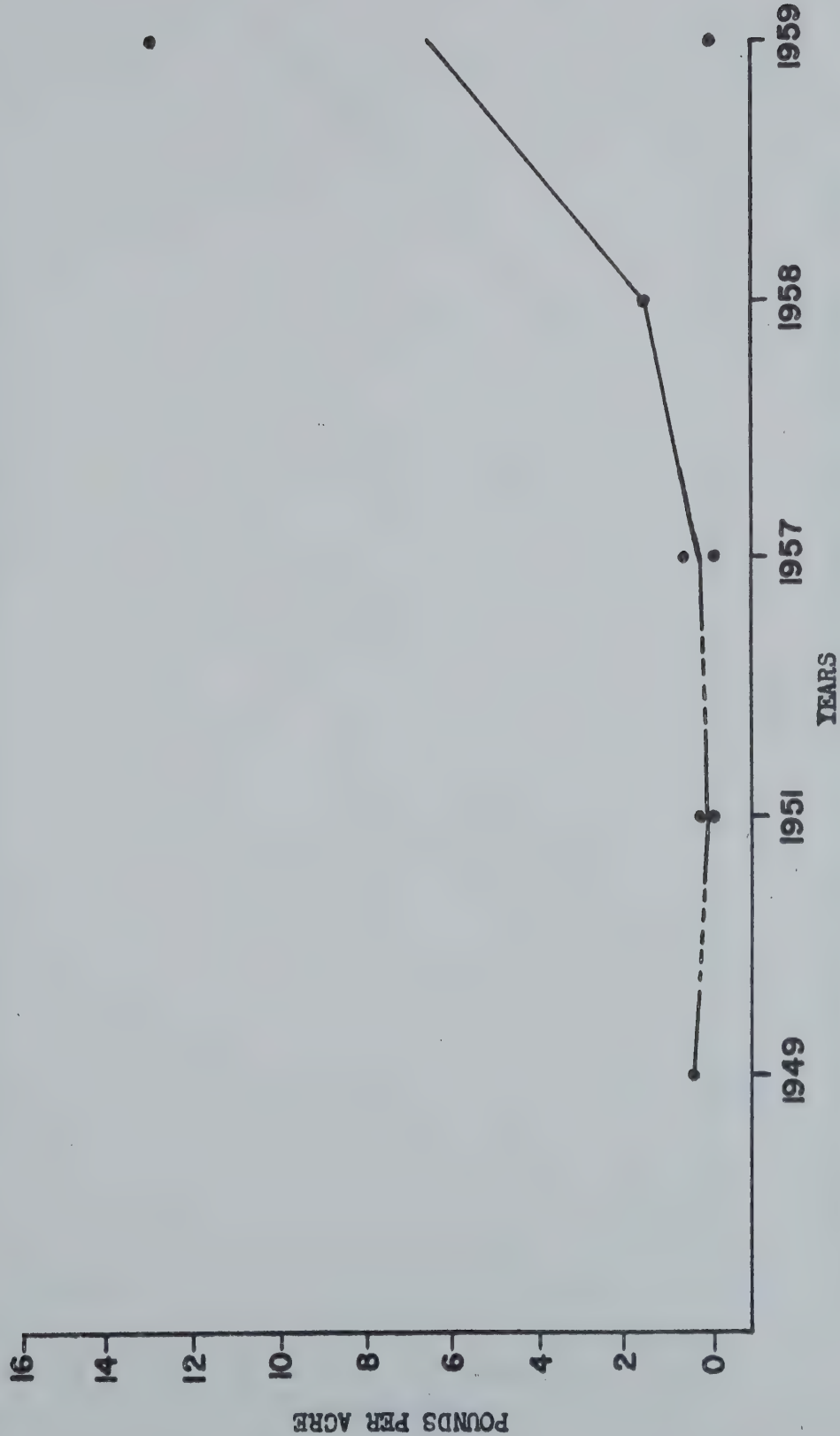
Again, there is no clear-cut increase in spotted bass following the addition of shad. The upturn may be natural fluctuation.

Figure 4. White Bass: Pounds per acre in Lake Martin before and after the addition of threadfin shad in October, 1957. The circles indicate the results of each sample and the line represents the averages.



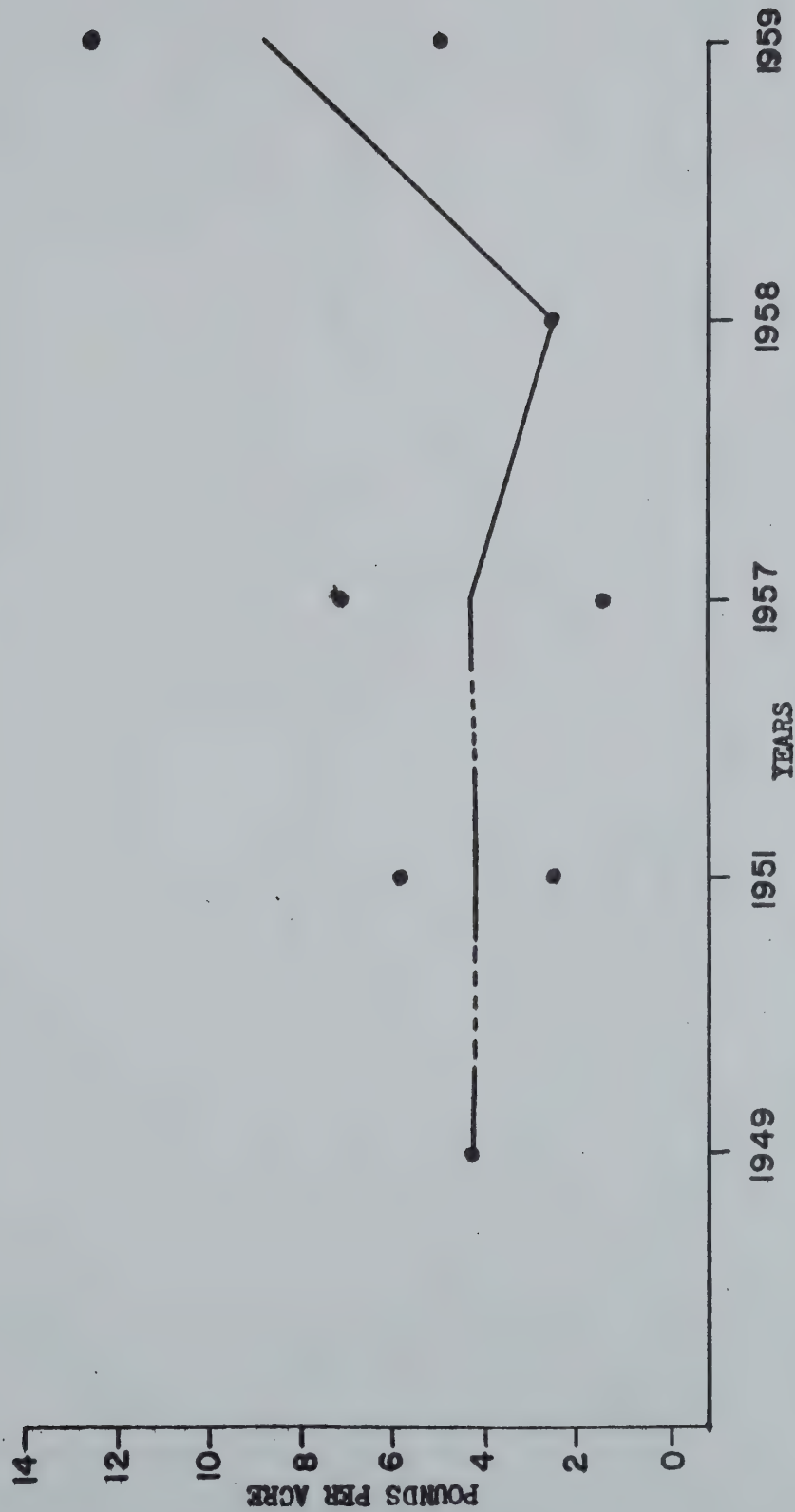
There is here no evidence of increase in white bass following the addition of shad.

Figure 5. White and Black Crappie: Pounds per acre in Lake Martin before and after the addition of threadfin shad in October, 1957. The circles indicate the results of each sample and the line represents the averages.



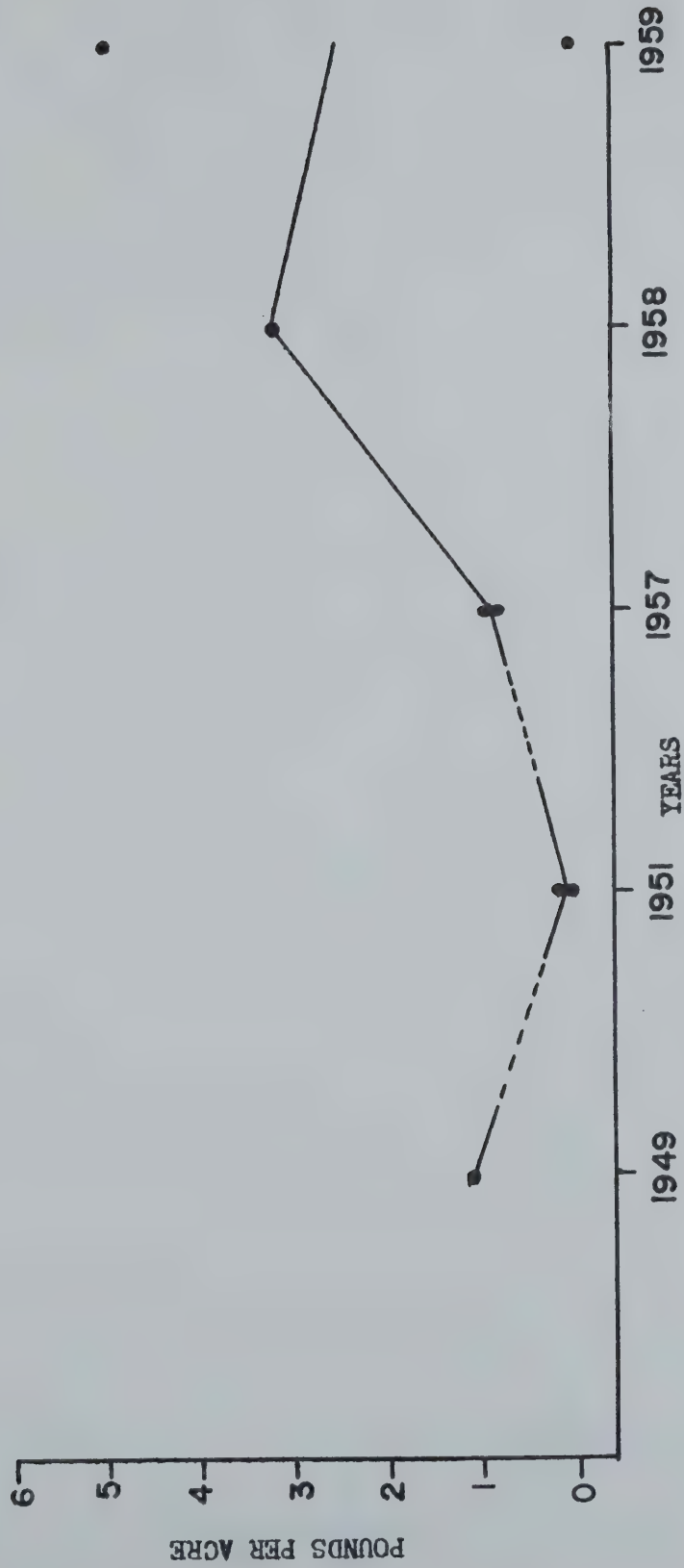
Here there appears to be a definite upward trend in crappie following the addition of shad. However, the two samples taken in 1959 varied from 0.001 pound in the open water to 12.5 pounds in the cove; thus, insufficient samples were taken to definitely establish that crappies had materially increased.

Figure 6. Channel Catfish: Pounds per acre in Lake Martin before and after the addition of threadfin shad in October, 1957. The circles indicate the results of each sample and the line represents the averages.



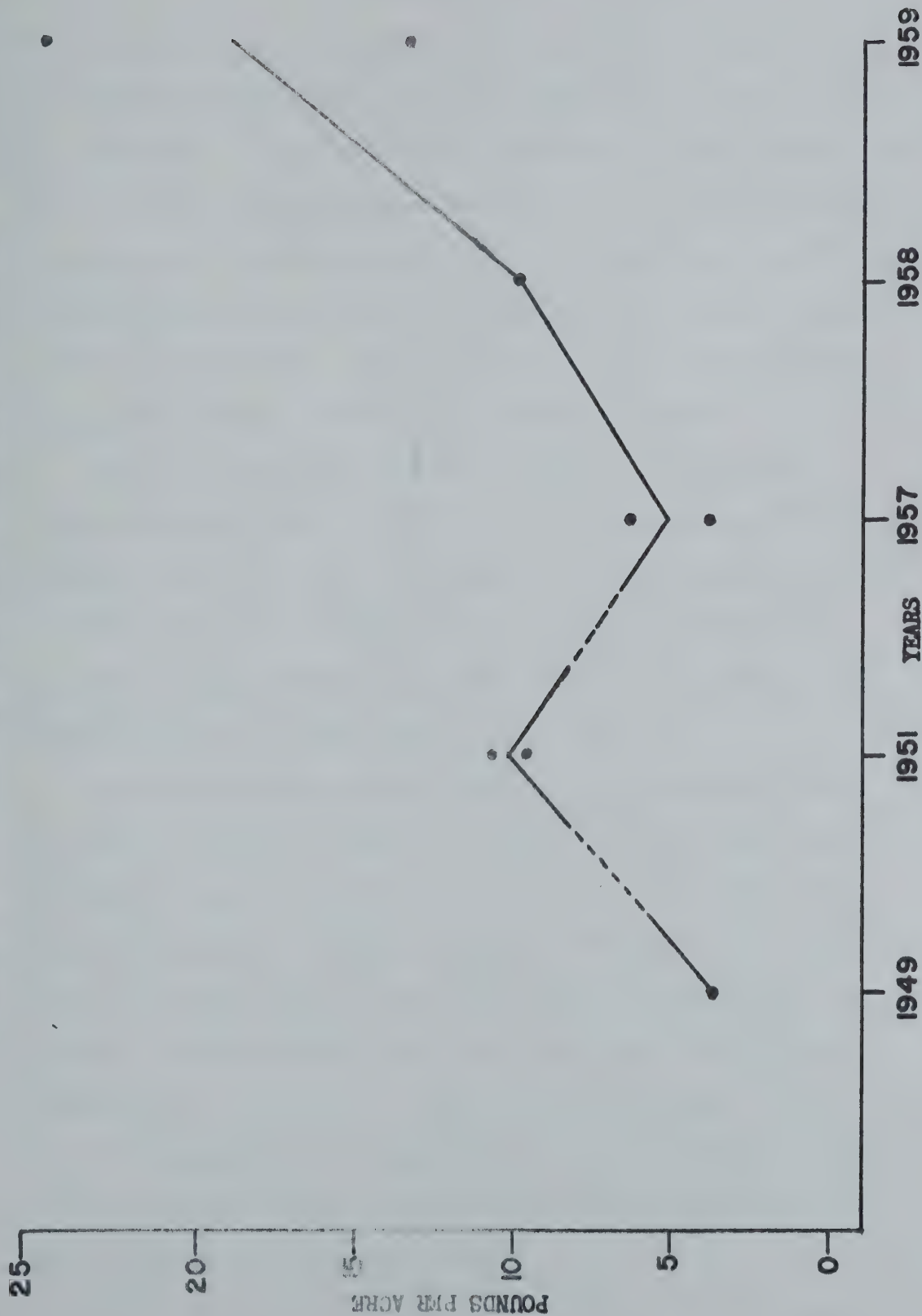
Channel catfish would appear to be increasing, but again variations between samples are such that no definite conclusions can be drawn.

Figure 7. Flathead Catfish: Pounds per acre in Lake Martin before and after the addition of threadfin shad in October, 1957. The circles indicate the results of each sample and the line represents the averages.



From the above evidence, it would appear that the flathead catfish were increasing, but since only one sample was taken in 1958 and only two in 1959, no definite conclusions can be drawn.

Figure 8. Bluegills: Pounds per acre in Lake Martin before and after the addition of threadfin shad in October, 1957. The circles indicate the results of each sample and the line represents the averages.



Bluegills would definitely appear to be increasing. However, exactly why the introduction of shad should increase bluegill production is unknown.

Conclusions

All the evidence available allows no clear-cut decision to be reached upon the effect of the introduction of threadfin shad in Lake Martin. There seems to have resulted a slight upward trend in the standing crop of largemouth bass, crappie, flathead catfish, bluegills, and possibly channel catfish, but inadequate samples of the population are available for the years 1957 to 1959, to definitely establish this. There appeared to be no increase in white bass, spotted bass, shellcrackers, suckers or minnows.

Due to the importance of this problem, a greater number of samples should be taken in 1960 to more adequately evaluate the effects of threadfin shad. A minimum of 4 to 6 samples at any one period would appear necessary, and to properly understand the dynamics of the population such sampling should be conducted in spring and again in late summer or early fall.

Scale samples from various species are being measured and the rates of growth determined to find if large predatory fishes are growing faster following the stocking of shad. Additional research should be conducted to determine the feeds eaten in Lake Martin by various sizes of the spotted bass, the white bass, and channel catfish to better understand their continued slow growth following the availability of young shad for predation. Also, as it is not understood why bluegills have increased following introduction of shad, investigation of the feeds utilized in Lake Martin by this species would be helpful.

LAKE MARTIN

YOUNG'S LANDING

OPEN WATER SAMPLE

Date July 14, 1959

Area 1 Acre

INCH GROUP	CHANNEL CATFISH		LARGEMOUTH BASS		SPOTTED BASS		WHITE BASS		WHITE CRAPPIE	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	112	0.20							1	Trace
2	209	0.72	5	0.02	385	1.45				
3	18	0.18	6	0.04	138	0.95				
4	1	0.02			7	0.14				
5					1	0.08				
6					1	0.10				
7			2	0.25	1	0.15	1	0.15		
8					2	0.45				
9			2	0.50	1	0.30	1	0.40		
10			1	0.40	1	0.50	1	0.40		
11	6	2.05								
12					1	0.70				
13	1	0.60			1	0.75				
14							1	1.20		
15	1	0.80	3	5.00						
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	348	4.57	19	6.21	539	5.57	4	2.15	1	Trace

Notes:

Date July 14, 1959

Area 1 Acre

INCH GROUP	BLACKTAIL REDHORSE		THREADFIN SHAD		LOGPERCH		BLACKTAIL SHINER		BLUNTNOST MINNOW	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			3220	2.9	1	Trace				
2			2544	6.4	102	0.3	31	0.06		
3			298	1.8	38	0.4	1	Trace	2	0.01
4			1639	29.3	65	0.67	18	0.35	4	0.08
5			9	0.3	4	0.11	1	0.03		
6			1	0.05	1	0.04				
7										
8										
9										
10										
11	1	0.6								
12	2	1.4								
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	3	2.0	7711	40.8	211	1.52	51	0.44	6	0.09

Notes:

Area 1 Acre

Notes:

LAKE MARTIN

YOUNG'S LANDING

COVE SAMPLE

Area 2.2 Acres

Notes:

Collected: ~~Poison, Seine, Draining, Electricity.~~ Area 2.2 Acres

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLACK CRAPPIE		WHITE CRAPPIE		BLUEGILL		SHELLCRACKER		LONGEAR SUNFISH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			1	Trace	449	0.37				
2			7	0.03	89	0.80				
3					193	3.10			3	0.03
4	1	0.02	2	0.08	237	8.65	1	0.04	9	0.33
5	16	0.35	74	3.95	239	16.10	2	0.11	9	0.83
6	36	2.25	49	3.69	103	12.40				
7	6	0.75	39	5.45	39	7.75				
8	7	1.30	11	2.05	18	5.20				
9	3	0.95	15	3.90	1	0.45				
10			4	1.40						
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	70	7.02	202	20.55	1368	54.82	3	0.15	21	1.19

Notes:

Date July 16, 1959

Area 2.2 Acres

INCH GROUP	ORANGESPOTTED SUNFISH		GREEN SUNFISH		WARMOUTH		YELLOW BULLHEAD		CARP	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	6	Trace	254	0.24	6	Trace				
2	22	0.09	228	0.69	18	0.01	1	0.02		
3	20	0.42	417	7.37	120	1.98	2	0.05		
4			133	4.41	35	1.59				
5			12	0.70	15	1.10				
6			3	0.30	3	0.30				
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19									1	3.4
20									1	3.5
21										
22										
23										
24										
25										
26										
27										
28										
29										
30									1	12.8
TOTAL	48	0.51	1047	13.71	197	5.05	3	0.07	3	19.7

Notes:

Date _____

Area 2.2 Acres

INCH GROUP	THREADFIN SHAD		BLACKTAIL REDHORSE		SPOTTED SUCKER		LOGPERCH		FUNDULUS	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	10326	9.30							7	Trace
2	8159	20.50					251	0.69	18	0.01
3	960	5.80					105	0.41	3	Trace
4	5247	93.80					285	3.62		
5	28	0.96					4	0.12		
6	3	0.08								
7										
8										
9	1	0.20								
10	2	0.50								
11										
12			4	2.4	1	0.7				
13			1	0.7						
14			1	1.2						
15			3	4.0						
16			1	1.6						
17					3	6.6				
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	24726	131.14	10	9.9	4	7.3	645	4.84	28	0.01

Notes:

Date July 16, 1959

Area 2.2 Acres

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	SILVER CHUB		BLUNTNOST MINNOW		BLACKTAIL SHINER					
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1					8	Trace				
2			19	0.05	51	0.07				
3			14	0.11						
4			4	0.08	7	0.11				
5	1	0.04			1	Trace				
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	1	0.04	37	0.24	67	0.18				

Notes:

TOMBIGBEE RIVER SURVEYS

TOMBIGBEE RIVER SURVEYS

The Tombigbee River near Demopolis, Alabama, was sampled in three locations on August 7 and 8, 1958. The total pounds of fish per acre and the percentage of the total poundage by weight that was of harvestable size are included in Table I for each sample location.

TABLE I

Sample Number	Location	Total pounds of Fish per Acre 1958	Percentage of Harvestable Fish 1958
I	10 miles below plant	353	80
II	2 miles below plant	1,386	88
III	1 mile above plant	2,071	81

A large variation was found in the total pounds of fish per acre between the sample locations. This situation is encountered routinely in river populations. Sample locations are generally chosen so that the sample covers most or all of a deep hole. Fish tend to congregate in these holes during the day and probably move out onto the shallower river bed at night to feed. The amount of fish present in one of these holes is dependent on the size of the hole, the distance between such holes in the river and the suitability of the intervening shallower water as a foraging area. Also, migration of fish probably plays an important role in the distribution of fish in these areas. Samples of fish taken from these holes may vary considerably in total amounts depending on the factors described above.

The percentage of harvestable fish present in the samples (A_T value) of the 1958 survey indicated that wastes from Gulf States Paper Plant in that area had not had an adverse effect on the fish population at that time. Percentages of harvestable fish of 80 percent, 88 percent, and 81 percent in Samples I, II, and III respectively indicated excellent balance and are consistent with values obtained in a large number of samples from the Tombigbee River previously and other large rivers in the state.

An abnormal amount of waste material was released into the river in late August of 1958, resulting in the death of large numbers of fish in the affected area. On July 9 and 10, 1959, samples were taken in the same locations on the Tombigbee River to determine if the death of such large numbers of fish had changed the population composition either qualitatively or quantitatively.

The description of the three sample areas, and summarized results of each follow. Pie-charts are included for each area showing the composition of the principal species and with the fishes of harvestable size indicated by shaded areas.

Summary data from the 1959 samples are given in Table II.

TABLE II

Sample Number	Location	Total pounds of Fish per Acre	Percentage of Harvestable Fish
I	10 miles below plant	808	65
II	2 miles below plant	559	83
III	1 mile above plant	1,927	85

Tombigbee River, Ten Miles Downstream From Gulf States Paper Plant

Sample No. 1

July 9, 1959

This one-acre sample was located near the east side of the river.
 Application of eight gallons of Noxfish was completed by 8:10 A. M. No
 permanganate was used.

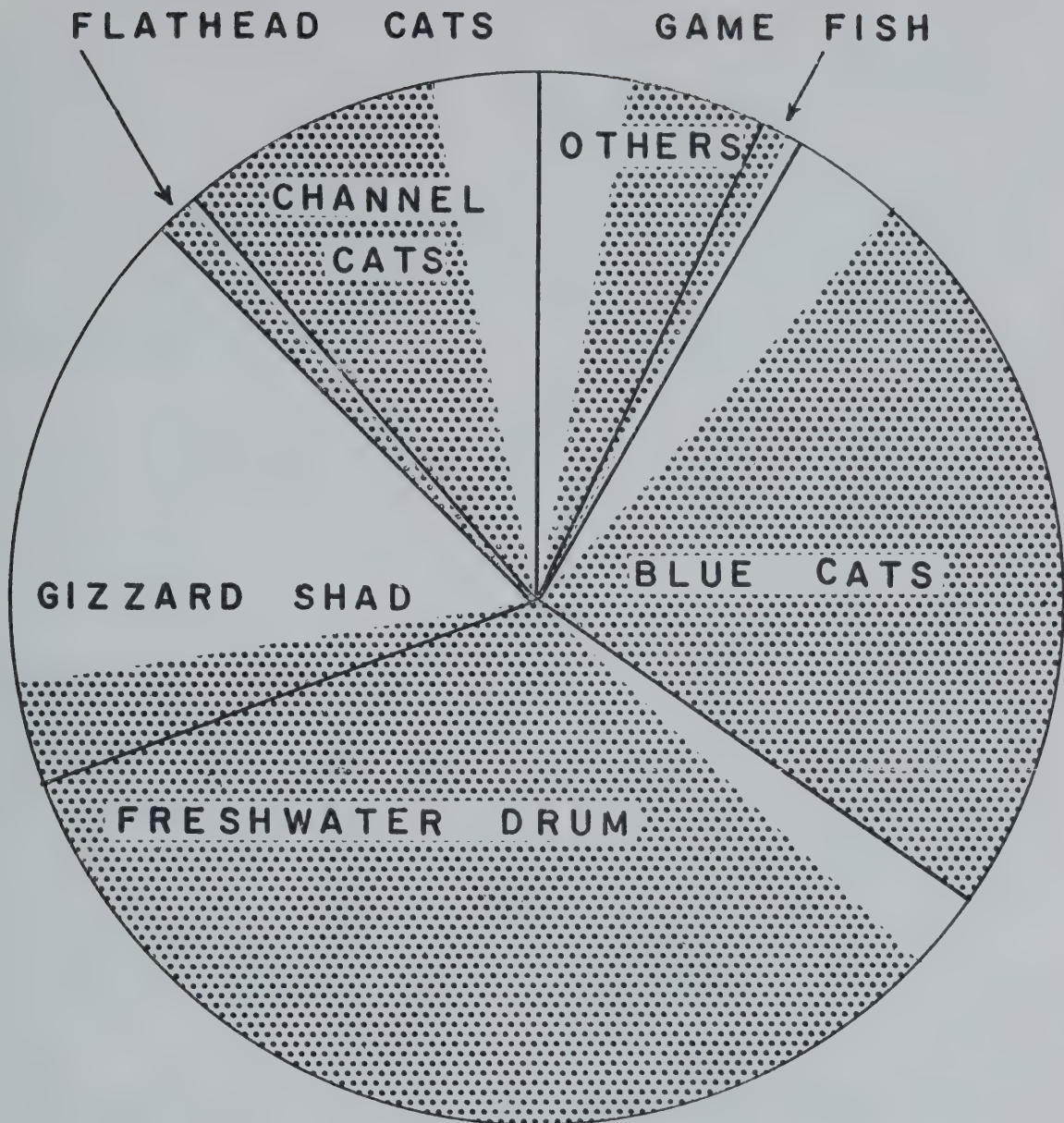
Total weight of fish = 808.5 pounds

F/C = 3.9

A_T = 69.4

E Values:

Blue catfish	26.8	Gizzard shad	18.4
Channel catfish	11.4	Threadfin shad	2.4
Flathead catfish	1.2	Carp sucker	1.6
Freshwater drum	34.4	Eels	0.9
Smallmouth buffalofish	0.3	Spoonbill	0.3
Black crappie	0.1	Bigeye chub	0.7
Bluegill	1.0	Other	<u>0.2</u>
Skipjack herring	0.3	Total	100.0



TOMBIGBEE RIVER, 10 MILES DOWNSTREAM
FROM GULF STATES PAPER PLANT
SAMPLE NO. 1

Tombigbee River, Two Miles Below Gulf States Paper Plant

Sample No. 2

July 9, 1959

This one-acre sample was taken on the west side of the river. Application of 7.5 gallons of Chemfish was between 1:00 P. M. and 1:15 P. M. No permanganate was used.

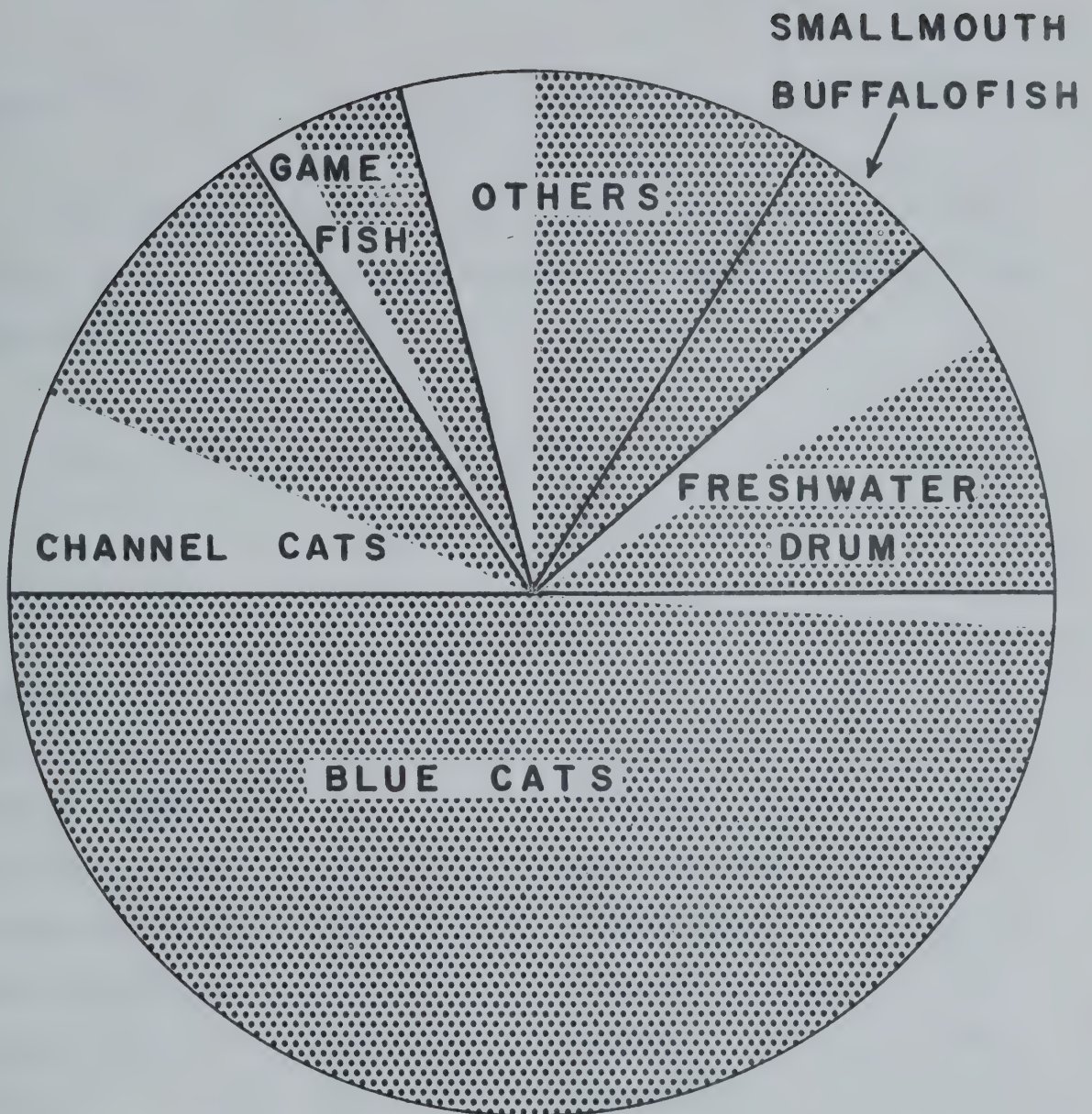
Total weight of fish = 558.8 pounds

F/C = 0.8

$A_T = 71.6$

E Values:

Blue catfish	50.1	Largemouth bass	0.2
Channel catfish	16.2	Highfin sucker	1.7
Flathead catfish	0.1	Quillback carpsucker	1.5
Freshwater drum	11.5	Carp sucker	5.8
Smallmouth buffalofish	4.6	American eel	0.1
Bluegill	3.3	Redear sunfish	0.2
Threadfin shad	0.4	Silverstripe shiner	0.3
Gizzard shad	2.2	Black crappie	0.3
Skipjack herring	0.2	Others	<u>0.3</u>
Spotted bass	1.0	Total	100.0



TOMBIGBEE RIVER, 2 MILES BELOW GULF

STATES PAPER PLANT

SAMPLE NO. 2

Tombigbee River, One Mile Above Gulf States Paper Plant

Sample No. 3

July 10, 1959

This one-acre sample was on the east side of the river. It had an average depth of 19 feet. Seven gallons of Noxfish was applied. No permanganate was used.

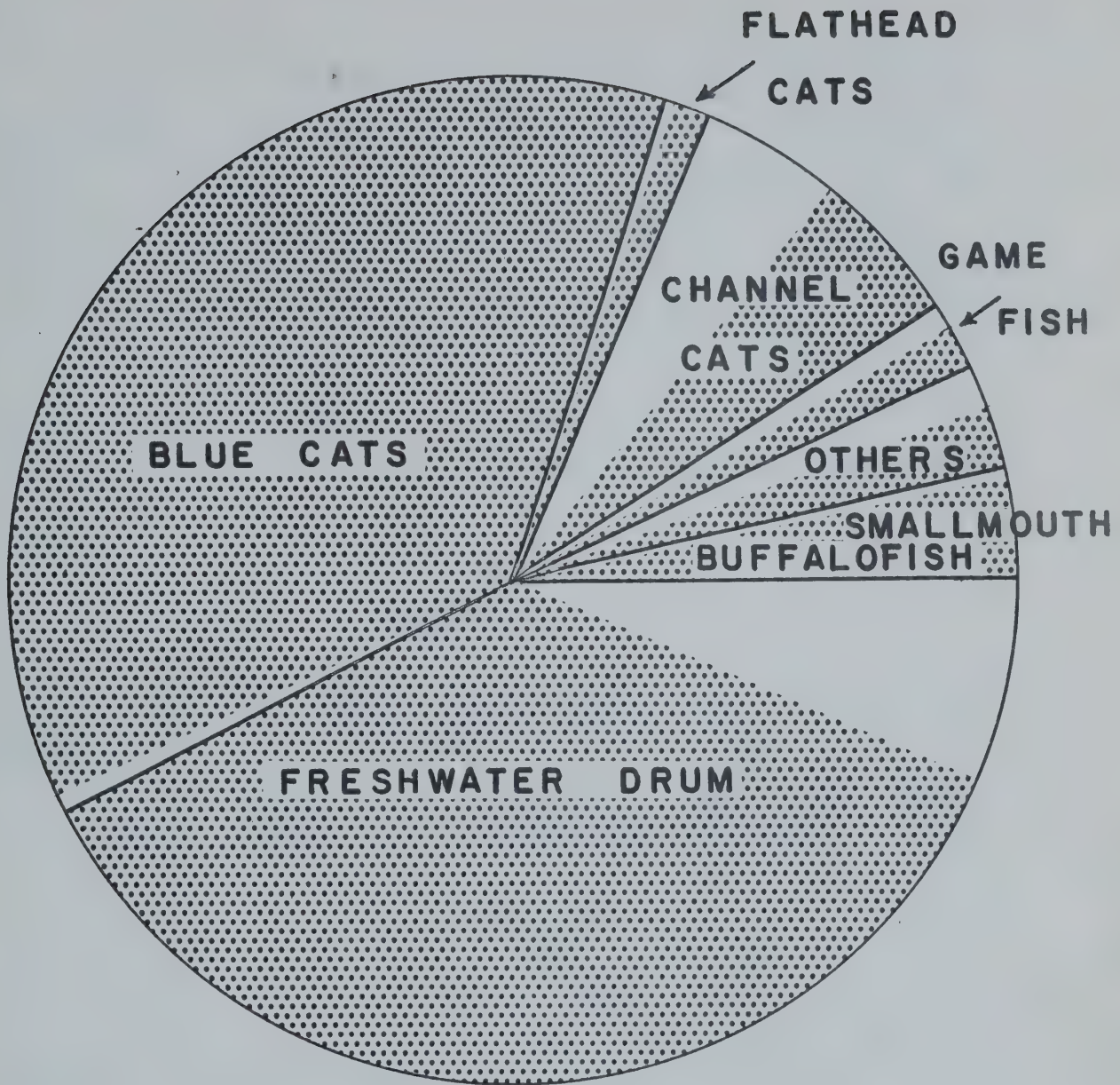
Total weight of fish = 1,927.5 pounds

F/C = 1.7

A_T = 85.0

E Values:

Blue catfish	37.4	Carp sucker	0.7
Channel catfish	9.3	Blacktail redhorse	0.6
Flathead catfish	1.4	Threadfin shad	0.6
Freshwater drum	42.5	Gizzard shad	0.2
Smallmouth bullalo	3.6	Skipjack herring	0.1
Spotted bass	0.8	Mooneye	0.2
Walleye	0.2	Spoonbill	0.2
Black crappie	0.1	Silverstripe shiner	0.4
Bluegill	1.0	Other	<u>0.5</u>
Longear sunfish	0.2	Total	100.0



TOMBIGBEE RIVER, 1 MILE ABOVE GULF

STATES PAPER PLANT

SAMPLE NO. 3

Comparison of the total pounds of fish per acre between the two years provides little information that a quantitative change has taken place in the Tombigbee River between August, 1958 and July, 1959. The total pounds of fish per acre increased over 100 percent in Sample I and decreased by approximately the same percentage in Sample II. Sample III remained essentially unchanged. More detailed information is presented in Table III. Here the total pounds per acre for three of the most important commercial species and the game fish are given for each sample area for the two years.

TABLE III.

Sample Number	TOTAL POUNDS OF FISH PER ACRE							
	1958				1959			
	Blue Catfish	Channel Catfish	Drum	Game Fish	Blue Catfish	Channel Catfish	Drum	Game Fish
I	108.0	66.0	110.0	19.0	216.0	92.0	278.0	10.0
II	407.0	120.0	218.0	86.0	280.0	90.0	64.0	28.0
III	573.0	343.0	844.0	68.0	721.0	180.0	818.0	43.0
Average	362.7	176.3	390.7	57.7	405.7	120.7	386.7	27.0

These data present much the same picture as total pounds per acre presented in Tables I and II. The total pounds per acre for a species increased from one year to another in one sample location only to decrease in a second sample location. The blue catfish increased from 108 to 216 pounds between 1958 and 1959 in Sample Location I. The same fish decreased from 407 pounds per acre to 280 pounds per acre between 1958 and 1959 in Sample Location II. An increase from 573 pounds per acre to 721 pounds per acre was recorded in Sample Location III.

These data do not demonstrate any clear-cut differences in the population between the two years. They suggest that shifting of portions of the populations from one feeding area or between two sample locations are probably responsible for the quantitative differences noted between the two years.

There is some evidence in a comparison of the percentage of harvestable fish (A_T value) of the same species between the two years that the percentage of harvestable fish was smaller in 1959 than in 1958. Table IV presents the percentage of harvestable fish of three of the most important commercial species and the game fish for each sample location for 1958 and 1959.

TABLE IV.

Sample Number	PERCENTAGE OF HARVESTABLE FISH							
	1958				1959			
	Blue Catfish	Channel Catfish	Drum	Game Fish	Blue Catfish	Channel Catfish	Drum	Game Fish
I	95.0	79.0	73.0	84.0	86.0	86.0	72.0	71.0
II	98.0	74.0	80.0	69.0	98.0	61.0	71.0	72.0
III	99.0	70.0	86.0	81.0	99.0	48.0	84.0	68.0
Total	292.0	223.0	239.0	234.0	283.0	181.0	247.0	221.0
Mean	97.2	74.2	79.6	77.9	94.2	60.3	82.2	73.6

As can be seen from Table IV, the percentage of harvestable fish for three of these four groups of fish was larger in 1958 than in 1959. A statistical evaluation of these data suggests that differences of this magnitude could be due to chance alone, but that they closely approach the point where chance could probably be ruled out as having caused such differences.

The differences in percentages of harvestable fish between years are probably real ones. After the kill of fish in August of 1958, fish from above and below the affected area migrated into the vacuum created. The smaller percentage of harvestable fish in 1959 could have been a result of a migration of a larger proportion of small fish of the several species into the barren area in 1958. These small fish probably moved more rapidly into the area as a result of population pressure and predation pressure in their original "home" areas.

A comparison of the 1958 and 1959 surveys does not reveal any quantitative or qualitative changes that are of a statistically significant nature. The suggested differences in the percentage of harvestable fish between the two years is of more biological significance than economic. This does not mean that there were not drastic changes in the population following the death of large numbers of fish in 1958. It does mean that by the time the samples were taken in 1959, that changes had been obliterated by shifting of the river population to occupy the affected area. Changes noted in the samples between the two years with the possible exception of percentage of harvestable fish do not exceed these expected to occur normally in river populations.

TOMBIGBEE RIVER

SAMPLE I

APPROXIMATELY TEN MILES BELOW GULF STATES PAPER PLANT

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample I, Approx. 10 miles below Gulf States Paper Plant Date July 9, 1959

POISON

Collected: ~~Poison, Seine, Draining, Electricity.~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLUE CATFISH		CHANNEL CATFISH		FLATHEAD CATFISH		DRUM		SMALLMOUTH BUFFALO	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	294	.229	696	.375	74	.047	88	.020		
2	599	1.450	447	.987	113	.274				
3	75	.436	37	.196	5	.036	1	.009		
4	1	.024	47	1.020			6	.223		
5	33	1.200	174	5.740	2	.074	51	2.400		
6	74	4.300	82	4.600	6	.370	16	1.150		
7	51	4.200	25	2.500	3	.300	24	3.300		
8	39	6.800	22	3.460			68	13.900		
9	34	6.600	30	7.200			99	32.600		
10	21	5.700	38	12.800			149	62.400		
11	29	10.700	29	14.700			108	58.800		
12	18	9.500	21	13.300			70	48.800		
13	16	10.900	13	9.200			19	25.200		
14	7	6.800	6	5.100			9	10.000		
15			5	5.000			7	10.600		
16	9	11.900	2	2.600			1	2.300	1	2.2
17	7	12.300	2	3.500			1	2.400		
18	1	1.900								
19	5	12.100					1	3.800		
20	2	6.200								
21					1	4.200				
22	5	21.100			1	4.300				
23										
24										
25	3	19.100								
26										
27										
28										
29										
30										
31	1	12.600								
45	1	49.900								
TOTAL	1,325	215.9	1,676	92.3	205	9.6	718	277.9	1	2.2

Notes:

Location Sample I, Approx. 10 Miles below Gulf States Paper Plant Date July 9, 1959

Area 1 Acre

INCH GROUP	BLACK CRAPPIE		BLUEGILLS		ORANGESPOTTED SUNFISH		LONGEAR SUNFISH		ROCK BASS	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1									1	.001
2			6	.06			1	.010	1	.018
3			4	.10	1	.011	4	.045	1	.022
4			7	.50			4	.207		
5	1	.04	19	1.78						
6			18	2.80						
7			11	2.70						
8			1	.30						
9										
10										
11										
12	1	.80								
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	0.84	66	8.2	1	.011	9	.26	3	.04

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample I, Approx. 10 miles below Gulf States Paper Plant Date July 9, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	LARGEMOUTH BASS		YELLOW BASS		LONGNOSE GAR		SPOTTED GAR		WHITE CRAPPIE	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2										
3										
4									5	.10
5					1	.008			1	.043
6										
7	1	.1								
8			1	.3						
9										
10										
11										
12										
13										
14							2	.32		
15										
16										
17										
18										
19										
20										
21							1	1.30		
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	1	0.1	1	0.3	1	.008	3	1.6	6	0.14

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample I, Approx. 10 miles below Gulf States Paper Plant Date July 9, 1959

Collected: Poison, ~~Seine, Draining, Electricity.~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	WARMOUTH		CARP		SPOTTED SUCKER		CARP SUCKER		PADDLEFISH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	23	.037								
2	2	.008	1	.008	1	.001				
3										
4										
5										
6										
7										
8										
9										
10										
11							1	.82		
12							1	1.10		
13										
14										
15							1	1.70		
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28									1	2.2
29										
30										
TOTAL	25	.04	1	.008	1	.001	3	3.62	1	2.2

Notes:

Area 1 Acre

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River -

Location Sample I, Approx. 10 miles below Gulf States Paper Plant Date July 9, 1959

Collected: Poison, Seine, ~~Draining, Electricity.~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	MADTOM		<u>PERCINA</u> SP.		<u>PIMPHALES</u> SP.		GAMBUSIA		SILVER CHUB	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	3	.01	1	.0002	3	.0011	6	.004	85	.041
2	73	.20			1	.0022			518	.746
3					2	.0231			11	.150
4										
5									1	.040
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	76	.21	1	.0002	6	.03	6	.004	615	.98

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River -

Location Sample I, Approx. 10 miles below Gulf States Paper Plant Date July 9, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BIG EYE CHUB		SILVER BAND SHINER		BULLHEAD MINNOW		BLACKTAIL SHINER		SPECK DARTER	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	38	.028	44	.029	50	.036	21	.06	1	Tr.
2	103	.167	19	.025	61	.183	23	.18		
3	65	.708	38	.177	11	.154	12	.17		
4	33	.566								
5	1	.033								
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	240	1.50	101	.23	122	.37	56	.41	1	Trace

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample I, Approx. 10 miles below Gulf States Paper Plant Date July 9, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	NEEDLE FISH		EELS		SILVERSTRIFE SHINER					
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2					8	.01				
3	1	Trace			308	2.06				
4					546	7.25				
5			2	.017						
6			1	.003						
7	1	.008								
8										
9										
10										
11			1	.086						
12			3	.300						
13			6	1.100						
14			3	.600						
15			2	.300						
16			1	.300						
17	1	.300	1	.300						
18										
19			4	2.000						
20										
21			1	.600						
22			1	.700						
23			1	.800						
24										
25										
26										
27										
28										
29										
30										
TOTAL	3	.31	27	7.1	862	9.32				

Notes:

TOMBIGBEE RIVER

SAMPLE II

SAYER'S LANDING

TWO MILES BELOW GULF STATES PAPER PLANT

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample II, Sayer's Landing 2 miles below Gulf States Paper Plant Date July 9, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLUE CATFISH		CHANNEL CATFISH		FLATHEAD CATFISH		FRESHWATER DRUM		SMALLMOUTH BUFFALOFISH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			8	0.01	1	0.01				
2			27	0.10						
3			1	0.01						
4			24	0.50			3	0.1		
5			29	0.90	6	0.26	5	0.2		
6			30	1.40	2	0.13	12	1.0		
7	3	0.3	6	0.50	1	0.10	29	4.0		
8	6	1.7	29	4.60			63	13.2		
9	7	1.4	46	9.30			45	13.3		
10	5	1.5	29	7.50			32	13.2		
11	4	1.5	28	10.70			11	5.8		
12	7	3.6	17	8.50			11	7.5		
13	4	2.6	5	3.20			3	2.5		
14	2	1.7	5	4.40			1	1.2	2	2.6
15	2	1.9	6	4.70			2	2.4	5	8.8
16	5	7.0	4	5.30					3	6.9
17	3	5.2	2	2.60						
18	1	2.4	2	4.40					1	2.9
19	2	5.4	2	4.20						
20	3	9.2								
21	4	14.3							1	4.6
22	4	19.4								
23	1	4.7								
24	1	5.9								
25	4	28.0								
26	2	17.5								
27	2	18.0								
28	2	20.3								
29										
30	1	15.6								
31	1	15.0								
32	1	18.1	1	17.7						
38	2	57.8								
TOTAL	79	280.0	301	90.5	10	0.5	217	64.4	12	25.8

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River

Location Sample II, Sayer's Landing-2 miles below Gulf States Plant Date July 9, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	LARGEMOUTH BASS		SPOTTED BASS		BLACK CRAPPIE		BLUEGILLS		LONGEAR SUNFISH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2			1	Trace	3	0.02	7	0.05	3	.02
3					6	0.05	12	0.26	5	.08
4			1	0.02	2	0.06	28	1.20	4	.25
5			1	0.06	2	0.20	56	4.60	1	.01
6							30	4.17		
7	1	0.3			1	0.20	18	4.40		
8							11	3.40		
9										
10					2	1.00				
11										
12	1	0.9								
13			2	1.90						
14										
15			1	1.50						
16			1	1.90						
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	1.2	7	5.4	16	1.5	172	18.5	13	.36

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River

Location Sample II, Sayer's Landing, 2 mi. below Gulf States Plant Date July 9, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	SHELLCRACKER		WARMOUTH		ORANGESPOTTED SUNFISH		HIGHFIN SUCKER		CARPSUCKER	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			7	0.01						
2			9	0.03	5	0.03				
3	1	0.02								
4										
5	1	0.10								
6	2	0.20								
7										
8	2	0.70								
9										
10							1	0.6		
11							4	3.8	13	12.1
12							5	4.1	20	16.6
13							1	1.0	2	2.3
14									1	1.5
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	6	1.0	16	0.05	5	0.03	11	9.5	35	32.5

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-Sample II

Location Sayer's Landing, 2 miles below Gulf States Paper Plant

Date July 9, 1959

Collected: Poison, ~~Seino~~, ~~Draining~~, ~~Electricity~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	QUILLBACK		GIZZARD SHAD		THREADFIN SHAD		SKIPJACK		FRECKLED MADTOM	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2					17	0.06				
3					14	0.09				
4					3	0.08	1	0.02	2	0.02
5			5	0.30	3	0.10				
6			19	1.40	22	1.10				
7			13	1.65	11	0.70	1	0.09		
8			18	3.40						
9			7	1.70			1	0.18		
10	2	1.2	3	1.00						
11	3	2.2	3	1.50						
12	4	3.8	1	0.60			1	0.60		
13	1	1.1								
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	10	8.3	69	12.4	70	2.1	4	0.9	2	0.02

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-Sample II

Location Sayer's Landing, 2 miles below Gulf States Paper Plant Date July 9, 1959

Collected: Poison, Seine, ~~Draining, Electricity.~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	SILVER STRIPE SHINER		BLACKTAIL SHINER		BULLHEAD MINNOWS		SILVER CHUB		BIG EYED CHUB	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1									9	0.01
2	5	0.02	2	0.01	28	0.07			15	0.03
3	106	0.82	14	0.12	17	0.16	13	0.12	26	0.17
4	65	0.85	9	0.19			7	0.19	4	0.04
5			2	0.07			1	0.02		
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	176	1.7	27	0.4	45	0.2	21	0.3	54	0.2

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-Sample II

Location Tombigbee River-Sample 11
Sayer's Landing, 2 miles below Gulf States Paper Plant

Date July 9, 1959

Collected: Poison, Seime, ~~Draining, Electricity.~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	ATLANTIC NEEDLEFISH		EEL							
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2										
3										
4			1	0.01						
5										
6										
7			4	0.08						
8			1	0.04						
9										
10			2	0.11						
11										
12			2	0.30						
13	1	0.1	1	0.20						
14										
15										
16										
17										
18	1	0.3								
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	0.4	11	0.7						

Notes:

TOMBIGBEE RIVER

SAMPLE III

BELOW DEMOPOLIS ABOVE GULF STATES PAPER PLANT

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample III, below Demopolis above Gulf States Paper Plant Date July 10, 1959

Collected: Poison, Seine, Draining, Electricity.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLUE CATFISH		BLUE CATFISH		CHANNEL CATFISH		FLATHEAD CATFISH		FRESHWATER DRUM	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			1 (37")	226	24	0.02	1	0.002		
2					203	0.52	25	0.056		
3							4	0.020		
4					76	1.10			23	0.8
5					272	8.50	9	0.45	94	4.8
6	11	0.6			94	4.90	7	0.57	156	11.4
7	2	0.2			123	10.80	1	0.10	253	34.8
8	9	1.4			127	18.00	2	0.30	390	76.2
9	19	3.7			103	19.50	2	0.50	267	74.8
10	15	4.2			119	30.40	4	1.30	251	93.6
11	10	3.8			52	19.30	2	1.00	177	93.2
12	10	4.9			33	16.40	2	1.10	117	80.8
13	13	8.6			24	14.90	2	1.70	100	87.7
14	15	13.3			16	12.90			45	49.3
15	7	8.0			7	7.30	2	2.70	27	37.1
16	12	15.8			6	7.70			18	23.1
17	14	24.1			2	2.70			12	26.3
18	13	26.5			1	2.20			5	11.6
19	5	13.0			1	2.40			2	6.5
20	9	28.7							3	13.2
21	6	21.3							2	10.0
22	4	18.0					1	4.10	2	11.8
23	7	36.6							4	28.9
24	5	30.1								
25	9	63.0								
26	2	14.2							2	19.9
27	2	17.3							1	10.8
28	4	41.1								
29	4	50.0							1	11.9
30	5	66.3								
31	2	28.5					1	13.2		
32	2	32.5								
33	3	55.6								
34	1	20.8								
35	2	45.7								
TOTAL	223	720.6	←-----		1,283	179.5	65	27.10	1,952	815.5

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample III, below Demopolis above Gulf States Paper Plant Date June 10, 1959

Collected: Poison, ~~Seins, Draining, Electricity.~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	SMALLMOUTH BUFFALOFISH		STRIPED BASS		SPOTTED BASS		WALLEYE		BLACK CRAPPIE	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2					2	Trace			1	0.01
3										
4									6	0.17
5					2	0.1			2	0.10
6										
7							12	0.3		
8							7	0.2		
9							5	0.3		
10			1	0.5	1	0.4	5	0.6		
11							3	0.7	1	0.80
12	2	1.8					4	1.1		
13	10	11.3								
14	5	7.4								
15	5	8.2			1	2.1				
16	4	8.3			1	2.0				
17	2	5.3			1	2.9				
18	1	3.1			1	2.8				
19					1	4.1				
20										
21	1	5.2								
22										
23	1	6.7								
24										
25										
26										
27	1	11.4								
28										
29										
30										
TOTAL	32	68.7	1	0.5	10	14.4	36	3.20	10	1.08

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample III, below Demopolis above Gulf States Paper Plant Date July 10, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLUEGILL		SHELLCRACKER		LONGEAR SUNFISH		ORANGESPOT SUNFISH		WARMOUTH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1									9	Trace
2					5	0.04	12	0.07	69	0.22
3	19	0.3			16	0.33	1	0.02		
4	64	2.3			10	0.36				
5	82	6.6	4	0.4	20	1.90				
6	32	4.2	5	0.7	3	0.35				
7	20	4.3	3	0.7						
8	3	1.0								
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	220	18.7	12	1.8	54	3.00	13	0.09	78	0.22

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River-

Location Sample III, below Demopolis above Gulf States Paper Plant Date June 10, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area **1 Acre**

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	ROCK BASS		GREEN SUNFISH		CARPSUCKER		BLACKTAIL REDHORSE SUCKER		HIGHFIN SUCKER	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			2	Trace						
2			3	0.01						
3	1	0.02								
4										
5										
6										
7										
8					4		1	0.2		
9										
10							1	0.4		
11					4	2.5	1	0.5	1	0.6
12					7	5.7	6	4.3	1	0.9
13					4	3.7	4	3.5		
14							2	2.1		
15					2	2.2	1	1.4		
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	1	0.02	5	0.01	17	14.1	16	12.4	2	1.5

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River

Location Sample III, below Demopolis above Gulf States Paper Plant Date July 10, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Acre 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	GIZZARD SHAD		ALABAMA SHAD		THREADFIN SHAD		SKIPJACK		MOONEYE	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1					2	Trace				
2			2	Trace	40	0.1	49	0.1		
3					112	0.9	15	0.1	1	0.01
4	2	0.04			49	1.2			1	0.09
5	3	0.10			125	4.5			2	0.20
6	11	0.70			61	3.3			7	0.70
7	8	0.9			23	1.7	1	0.1	8	1.00
8	5	0.8								
9	2	0.5					1	0.2	3	0.74
10	1	0.3					2	0.6	2	0.80
11	1	0.5					1	0.3		
12							1	0.5		
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	33	3.8	2	Trace	412	11.7	70	1.9	24	3.54

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River

Location Sample III, below Demopolis above Gulf States Paper Plant Date July 10, 1959

Collected: Poison, Seine, ~~Draining~~, Electricity.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	TADPOLE MADTOM		FRECKLED MADTOM		BULLHEAD MINNOW		BIGEYED CHUB		SILVER CHUB	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	2	Trace								
2			41	0.08	113	0.4	27	0.1	10	0.02
3			3	0.03	40	0.4	85	0.8	18	0.15
4			8	0.08			23	0.4	6	0.10
5			1	0.03			4	0.2		
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	Trace	53	0.22	153	0.8	139	1.5	34	0.3

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River

Location Sample III, below Demopolis above Gulf States Paper Plant Date July 10, 1959

Collected: Poison, ~~Seme, Draining, Electricity.~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	SILVERSTRIPE SHINER		SPOTTAIL MINNOW		DARTERS		SILVERY MINNOW		PUGNOSE MINNOW	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2	157	0.5	23	0.1	8	0.01			20	0.03
3	467	3.6	44	0.2			1	0.01		
4	243	3.6	15	0.3						
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	867	7.7	82	0.6	8	0.01	1	0.01	20	0.03

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Tombigbee River

Location Sample III, below Demopolis above Gulf States Paper Plant Date July 10, 1959

Collected: Poison

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	CENTRAL WEED SHINER		EELS		SPOONBILL		ATLANTIC NEEDLEFISH			
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2	3	0.01								
3										
4			1	Trace						
5			6	0.06						
6			11	0.12						
7										
8			1	0.04						
9										
10			1	0.05						
11										
12										
13			2	0.30			2	0.2		
14			2	0.50						
15			1	0.30						
16							2	0.2		
17			1	0.30			1	0.2		
18										
19										
20										
21			1	0.80						
22			1	1.00						
23			1	1.00						
24										
25										
26										
27										
28										
29										
30										
35					1	4.8				
TOTAL	3	0.01	29	4.47	1	4.8	5	0.6		

Notes:

WARRIOR RIVER

FISH POPULATION SURVEYS OF THE SIPSEY, MULBERRY, AND
LOCUST FORKS OF THE WARRIOR RIVER.

The Sipsey Fork of the Warrior was surveyed on West Branch and on Brushy Fork just below Highway U.S. 278. On West Branch, two surveys were made: one was just above and below the mill dam immediately below the highway bridge, and the other was taken approximately one-half mile downstream. These areas lie within the Bankhead National Forest and will be flooded by the Lewis Smith Dam of the Alabama Power Company.

The Mulberry Fork of the Warrior River was surveyed at a point approximately six miles southwest of Garden City and above the Dorsey Creek Dam site.

The Locust Fork of the Warrior River was surveyed at a point above the Smith's Fork Dam site, directly west of Cleveland, and south of Blountsville.

The following pages give detailed descriptions of each sample, and pie-charts indicating the species composition with harvestable fish shown by the shaded areas.

Comparisons of pounds of fish per acre, A_T values, and F/C ratios in these areas follow:

Area Sampled	Fish Pounds Per Acre	A_T	F/C
Sipsey Fork, West Branch in stream	43.4	80.6	6.1
Sipsey Fork, West Branch above dam	11.5	48.7	7.8
Sipsey Fork, Brushy Fork	49.2	65.4	2.4
Mulberry Fork	354.2	79.5	4.7
Locust Fork	63.5	28.8	6.0

Sipsey River, West Branch, Below Highway Bridge, U. S. 278

Sample No. 1

September 3, 1959

This one-acre sample had an average depth of 4 feet. Five gallons of Noxfish was applied by pouring a Noxfish-water mixture into the stream at the upstream end of the sample area. The fish toxicant was applied at approximately 7:30 A. M.

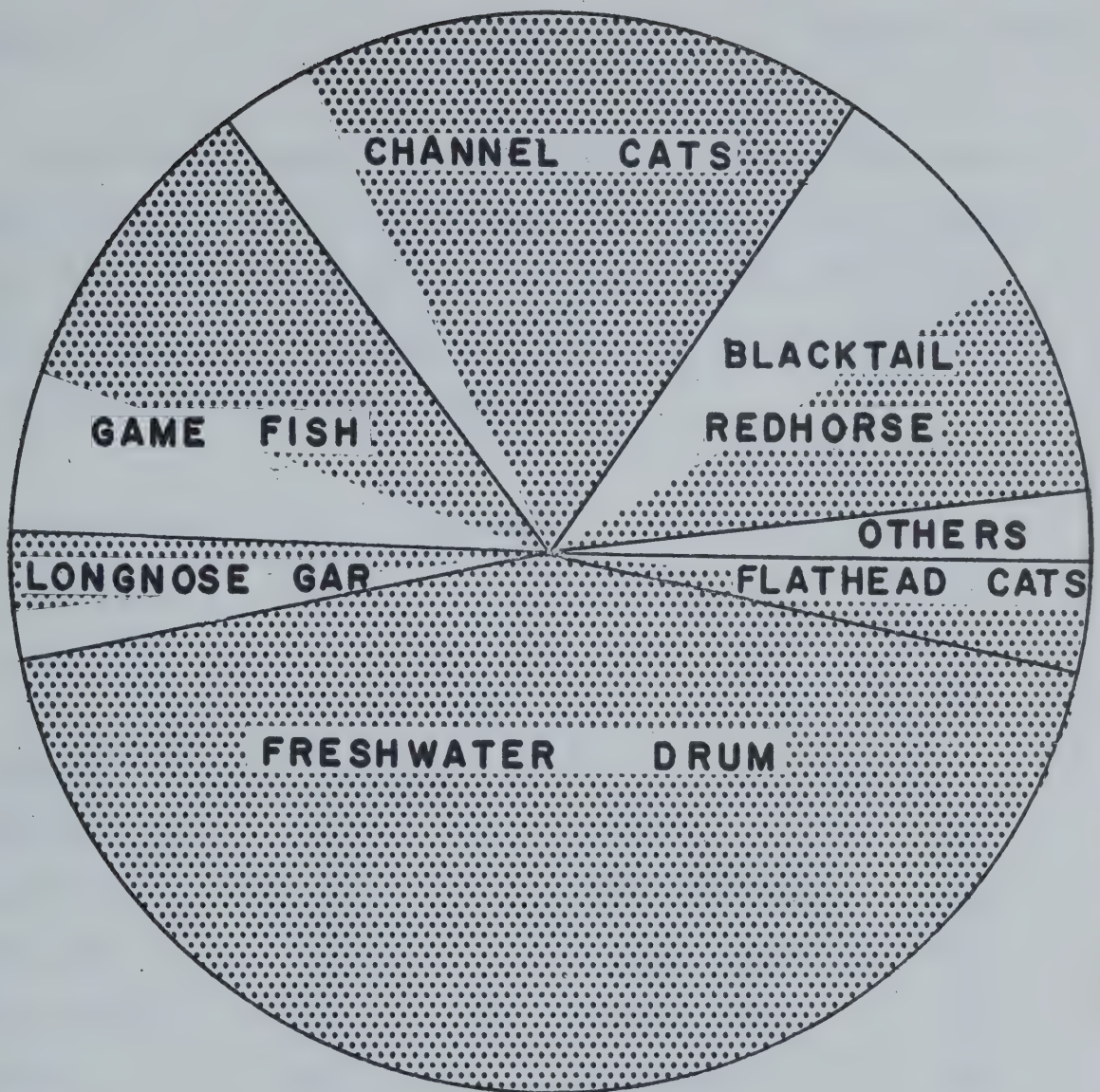
Total weight of fish = 43.4 pounds

F/C = 6.1

A_T = 80.6

E Values:

Channel catfish	19.7	Rock bass	1.1
Flathead catfish	3.0	Yellow bullhead	0.3
Freshwater drum	43.6	Blacktail redhorse	13.6
Largemouth bass	2.8	Spotted sucker	0.7
Spotted bass	1.0	Logperch	0.1
Redeye bass	3.0	Freckled madtom	0.3
Longnose gar	3.9	Fundulus	0.1
Bluegill	3.6	Bullhead minnow	0.1
Longear sunfish	2.6	Blacktail shiner	0.1
Green sunfish	0.1	Other	<u>0.3</u>
		Total	100.0



WEST BRANCH OF SIPSEY RIVER

SAMPLE NO. 1

Sipsey River, West Branch, Above Dam Near Highway 278

Sample No. 2

September 3, 1959

This one-acre sample had an average depth of 7 feet. The sample encompassed an acre of water backed up by a dam formerly used to supply power for a mill. Five gallons of Noxfish was applied in the sample area. Permanganate was applied along the downstream base of the dam and in the stream of water from the sluice gate.

Total weight of fish = 11.5 pounds

F/C = 7.8

A_T = 48.7

E Values:

Channel catfish	2.6	Warmouth	7.8
Spotted bass	2.0	Yellow bullhead	1.8
Redeye bass	8.6	Golden redhorse	26.0
Chain pickerel	0.3	Spotted sucker	5.1
Bluegill	29.5	Logperch	0.3
Rock bass	1.7	Fundulus	1.0
Longear sunfish	7.8	Blacktail shiner	<u>4.5</u>
Green sunfish	1.0	Total	100.0

West Branch of Sipsey River
(Below Dam)

September 3, 1959

These fish were recovered from the one-eighth acre hole immediately below the dam. Poison was applied to one acre of the impoundment above, and the poisoned water flowed through a sluiceway in the bottom of the dam into the hole below.

Total pounds recovered = 40.04 pounds

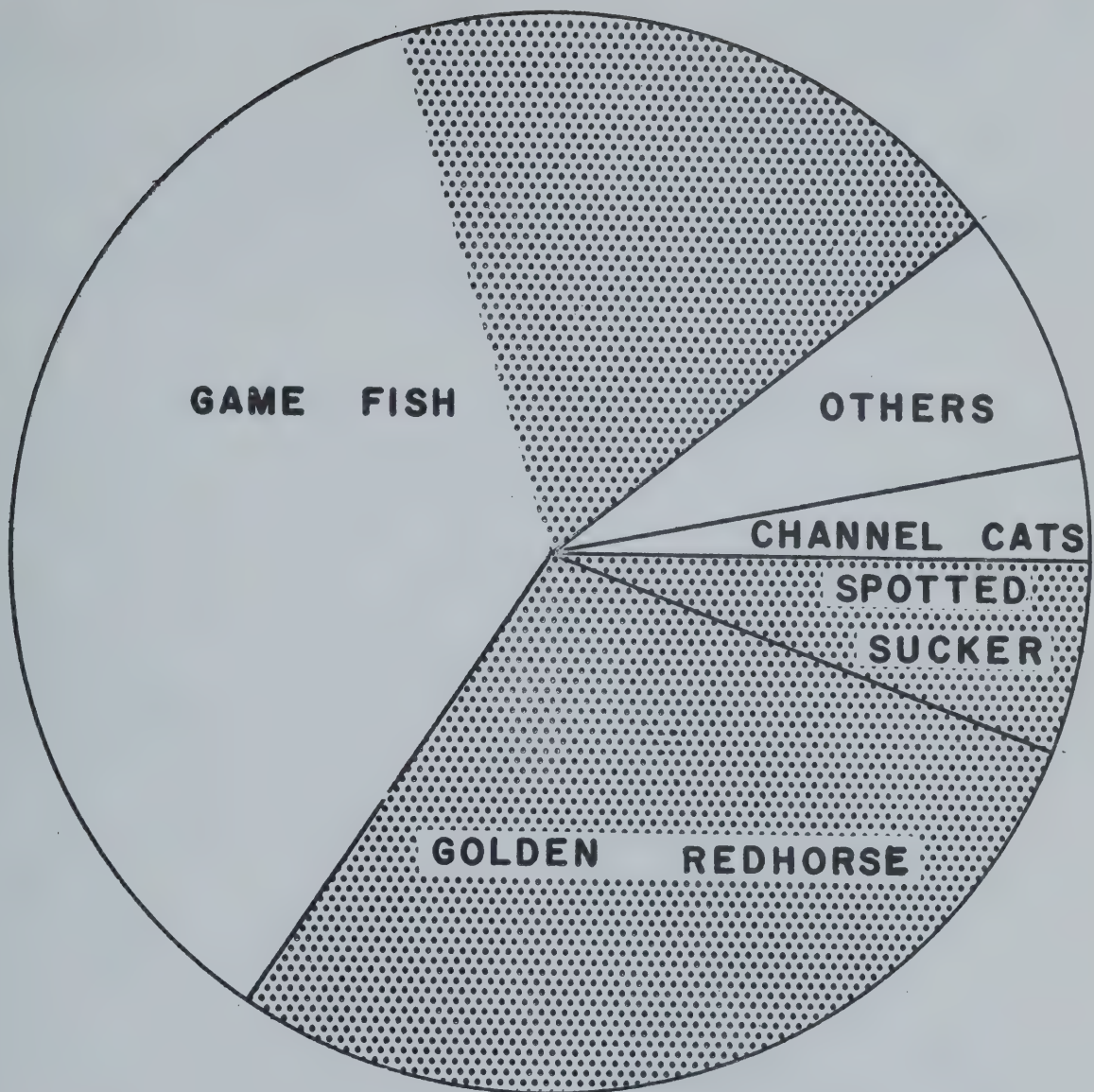
F/C = 0.5

A_T = 83.7

E Values:

Channel catfish	12.1	Longear sunfish	1.3
Flathead catfish	53.0	Green sunfish	0.5
Drum	9.8	Golden redhorse	3.3
Redeye bass	1.7	Blacktail redhorse	1.3
Spotted bass	10.6	Eel	2.2
Bluegill	0.8	All minnows	<u>0.9</u>
Rock bass	2.5	Total	100.0

Total percent game fish = 17.5



WEST BRANCH OF SIPSEY RIVER

SAMPLE NO. 2

Sipsey River, Brushy Fork, Near Highway 278

Sample No. 3

September 3, 1959

This 0.5-acre sample area extended across the width of the river. A seine block was used at the downstream side of the area. Twelve pounds of Noxfish was applied. Permanganate was used below the sample block.

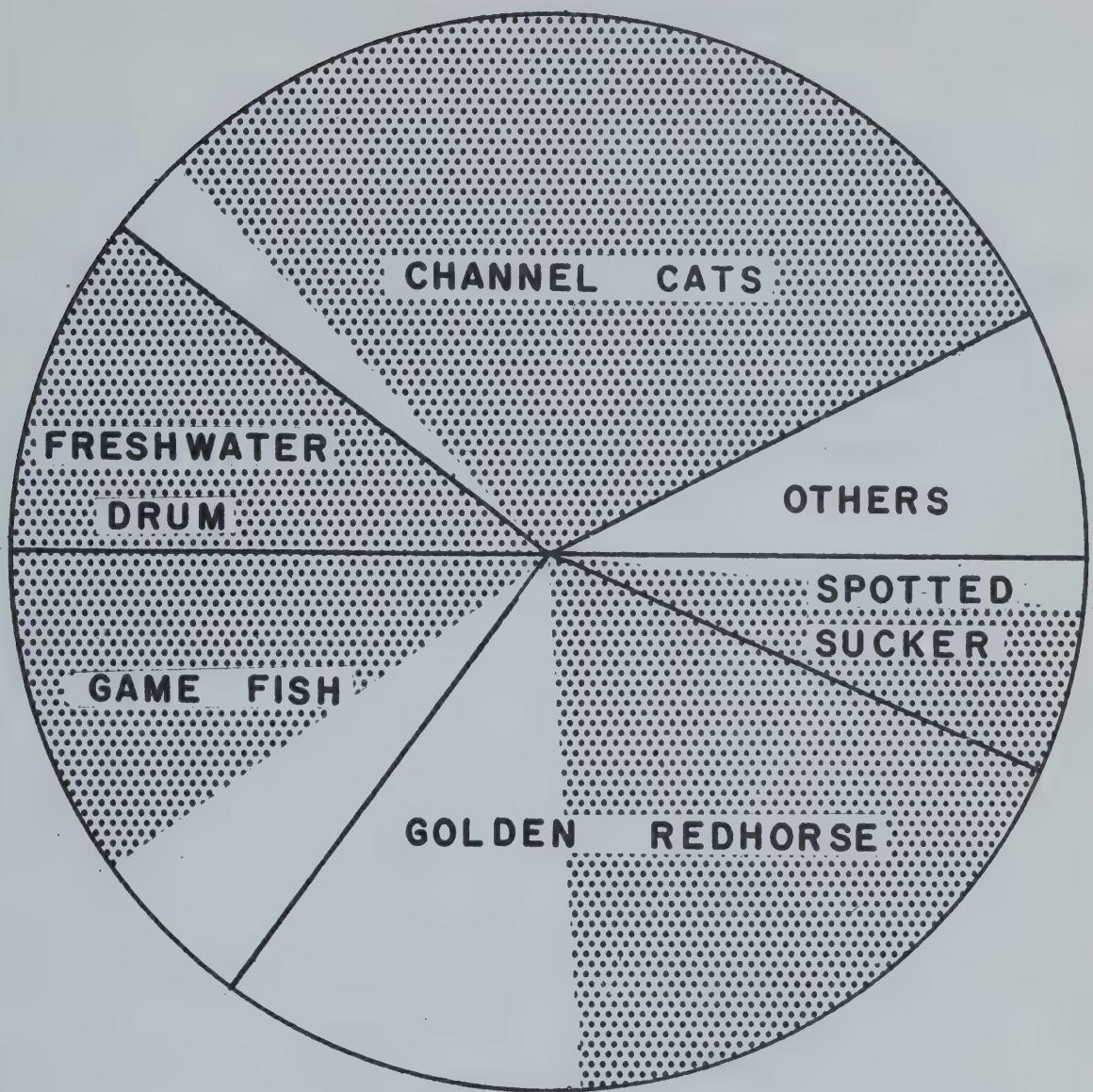
Total weight of fish = 24.6 pounds or 49.2 pounds per acre

$F/C = 2.4$

$A_T = 65.4$

E Values:

Channel catfish	32.3	Warmouth	0.7
Flathead catfish	0.4	Yellow bullhead	0.6
Freshwater drum	10.2	Blacktail redhorse	0.2
Spotted bass	5.1	Golden redhorse	28.4
Redeye bass	0.4	Spotted sucker	6.5
Bluegill	0.9	Logperch	0.7
Rock bass	1.6	Blacktail shiner	2.2
Longear sunfish	1.4	Eel	2.8
Green sunfish	5.0	Other	<u>0.6</u>
		Total	100.0



BRUSHY FORK OF SIPSEY RIVER

SAMPLE NO. 3

Mulberry Fork of Warrior River, Southwest of Garden City

Sample No. 4

September 4, 1959

This one-acre sample area extended across the width of the river, and had an average depth of 7.5 feet. Application of six gallons of Noxfish (2 p.p.m.) was completed about 8:45 A. M. Permanganate (60 pounds) was applied below the riffle at the downstream end of the sample area.

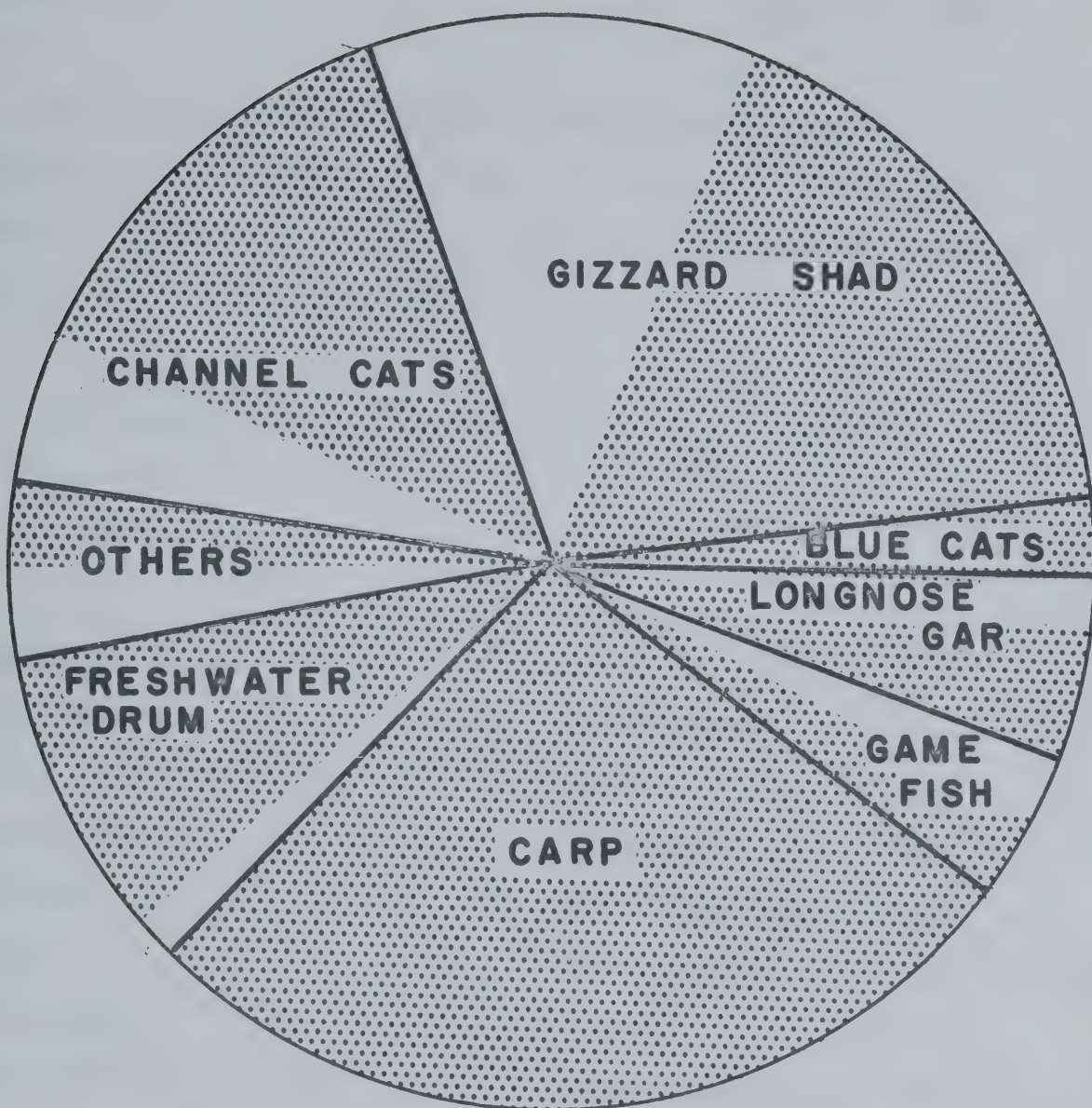
Total weight of fish = 354.2 pounds

F/C = 4.7

A_T = 79.5

E Values:

Blue catfish	2.7	Yellow bullhead	0.1
Channel catfish	17.1	Carp	27.7
Freshwater drum	9.6	Blacktail redhorse	2.1
Largemouth bass	0.6	Golden redhorse	0.1
Longnose gar	5.1	Spotted sucker	2.4
White crappie	0.5	Gizzard shad	28.2
Black crappie	0.1	Bullhead minnow	0.2
Bluegill	0.8	Blacktail shiner	0.1
Redear sunfish	0.2	Other	<u>0.1</u>
Green sunfish	2.3	Total	100.0



MULBERRY BRANCH OF WARRIOR RIVER

SAMPLE NO. 4

Locust Fork of Warrior River

Sample No. 5

September 4, 1959

This one-acre sample averaged eight feet in depth. The water was muddy at the time the sample was taken. Five gallons of Noxfish was applied at approximately 12:30 P. M. Permanganate (80 pounds) was added at the riffle below the sample area.

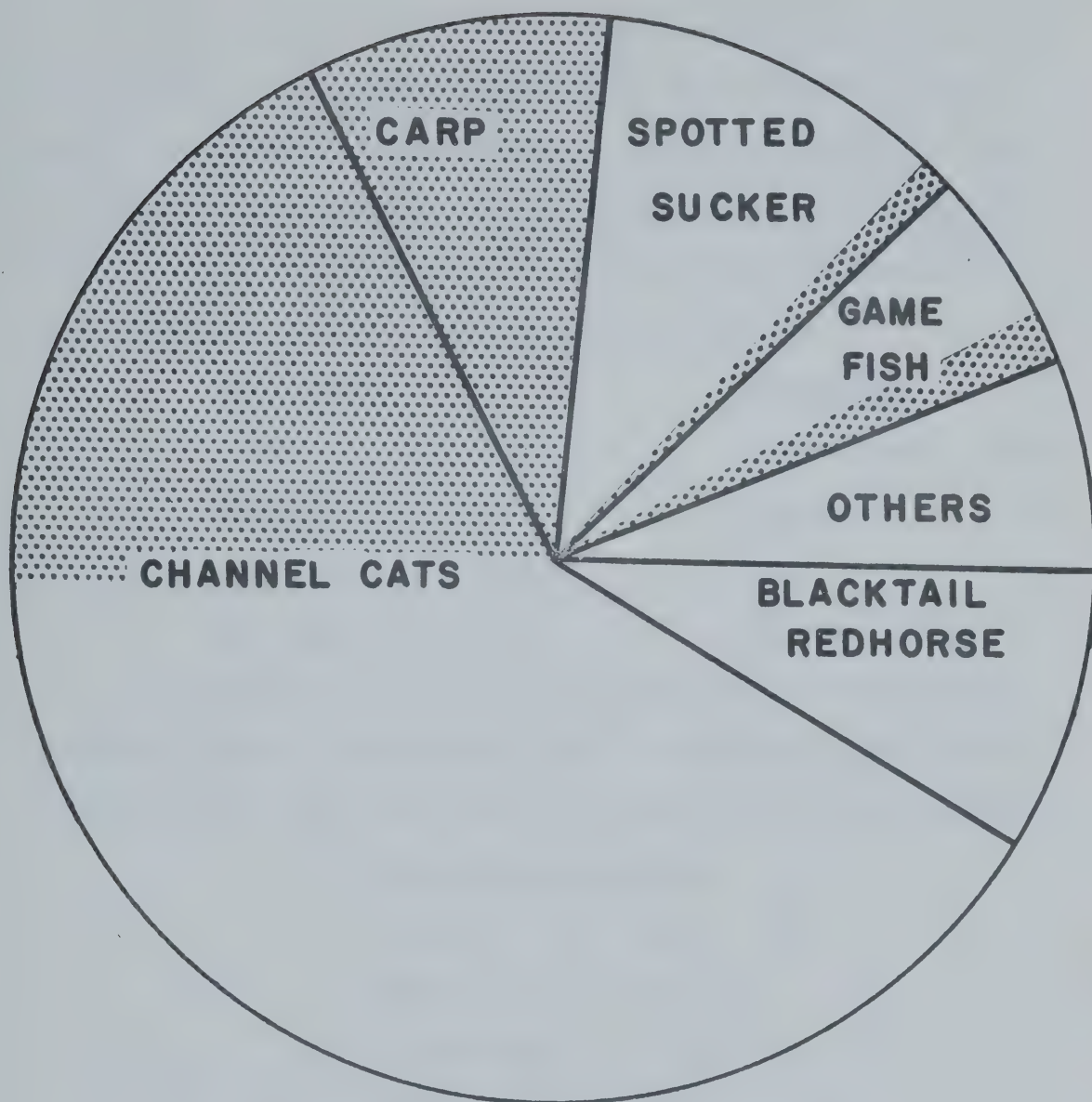
Total weight of fish = 63.5 pounds

F/C = 6.0

A_T = 28.8

E Values:

Channel catfish	59.2	Golden redhorse	0.4
Flathead catfish	1.1	Logperch	0.1
Largemouth bass	1.3	Stoneroller	0.1
Redeye bass	0.2	Silverstripe minnow	0.6
Bluegill	1.0	Blacktail shiner	1.9
Green sunfish	3.1	Goldfish	1.0
Longear sunfish	0.4	<u>Notropis</u> sp. No. 1	0.8
Carp	9.0	Creek chubsucker	0.2
Spotted sucker	11.2	Other	<u>Trace</u>
Blacktail redhorse	8.4	Total	100.0



LOCUST FORK OF WARRIOR RIVER

SAMPLE NO. 5

The two branches of the Sipsey Fork contained good populations, but were low in fertility as indicated by the low standing crops of 43.4 and 49.2 pounds of fish per acre. The basic similarity of the two streams is indicated by a comparison of the E values (percentage of total weight of a population due to a particular species) for the three principal species and for combined game fishes.

<u>West Branch</u>		<u>Brushy Fork</u>	
Drum	14.2	Channel cats	32.3
Channel cats	19.7	Suckers	35.1
Suckers	14.3	Drum	10.2
All game fishes	14.2	All game fishes	14.4

The presence of an old mill dam on West Branch, resulted in a different population immediately above as indicated by the following E values for the three principal species and for combined game fishes.

<u>West Branch Above Dam</u>	
Bluegill	29.5
Suckers	31.1
Redeye Bass	8.6
All Game Fishes	64.7

The quieting of water by the dam greatly increased the percentage of game fishes in the population. However, the pounds of fish per acre recovered in this area was only 11.5. An additional 40 pounds of fish was recovered immediately below the dam in an area of approximately one-eighth acre. Part of these fish could possibly have come from above the dam through a flume in the bottom of the dam. The E value for combined game species in this group of fishes was 17.5.

Mulberry Fork of the Warrior River supported a relatively high poundage of fish per acre (354.2) indicating that this stream probably received sewage from towns upstream. With $A_T = 79.5$ and $F/C = 4.7$, the population was in balance; however, the composition of the population was unsatisfactory as indicated by the following E values for the three principal species and for combined game fishes.

Mulberry Fork

Gizzard shad	28.2
Carp	27.7
Channel Cats	17.1
All Game Fishes	4.5

Locust Fork of the Warrior supported 63.9 pounds of fish per acre, which is near the average for streams in similar soil types. However, the A_T of 28.8, indicated an unbalanced condition such as usually results in rivers from pollution upstream. The E values of principal species were as follows:

Locust Fork

Channel Cats	59.2
Suckers	20.0
Carp	9.0
All Game Fishes	6.0

The most desirable predatory fish for impoundments is the large-mouth black bass. This species was present in small numbers in the West Branch of the Sipsey, in Mulberry Fork, and in Locust Fork, with E values of 2.8, 0.6, and 1.3 respectively. Spotted bass were present

in the Sipsey, but absent in the Mulberry Fork and Locust Fork samples. Redeye bass were present in the Sipsey and Locust Forks, but do not survive in impoundments. Crappie were absent in the Sipsey, but present in the Mulberry and Locust Fork samples.

Carp were present in relatively large numbers in the Mulberry and Locust Fork populations, and new impoundments on these streams may be expected to have this species make up a large part of the populations for the first few years. This species was absent in the Sipsey.

SIPSEY RIVER

WEST BRANCH

ONE-FOURTH MILE BELOW HIGHWAY BRIDGE ON U. S. 278

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Sipsey River, West Branch

Location One-fourth Mile Below Highway Bridges U. S. 278

Date September 3, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	CHANNEL CATFISH		FLATHEAD CATFISH		FRESHWATER DRUM		LARGEMOUTH BASS		SPOTTED BASS	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2	15	0.05	2	Trace					10	0.03
3	30	0.20	1	Trace					5	0.03
4									1	0.01
5	1	0.04							2	0.05
6	4	0.20	1	0.1					1	0.10
7	3	0.20								
8			1	0.2					1	0.20
9										
10	2	0.50								
11	1	0.30			6	3.6				
12	3	1.20			3	2.1				
13	5	2.80			3	2.8				
14	1	0.70	1	1.0			1	1.2		
15	1	0.80			1	1.5				
16					1	1.8				
17										
18	1	1.50								
19					1	3.7				
20					1	3.3				
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	67	8.49	6	1.3	16	18.8	1	1.2	20	0.42

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Sipsey River, West Branch

Location One-fourth mile below Highway Bridge on U. S. 278

Date September 3, 1959

Collected: Poison, Seine, ~~Draining~~, ~~Electricity~~.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	REDEYE BASS		LONGBASE GAR		BLUEGILL		LONGEAR SUNFISH		GREEN SUNFISH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1							5	0.01		
2	2	0.01					3	0.02		
3					1	0.02	21	0.40		
4					1	0.04	15	0.50	1	0.05
5	2	0.1			3	0.20	1	0.10		
6	1	0.1					1	0.10		
7					2	0.50				
8					1	0.40				
9					1	0.40				
10	1	0.5								
11	1	0.6								
12										
13										
14										
15										
16										
17										
18										
19										
20										
21			1	0.7						
22										
23			1	1.0						
24										
25										
26										
27										
28										
29										
30										
TOTAL	7	1.31	2	1.7	9	1.56	46	1.13	1	0.05

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Sipsey River, West Branch

Location One-fourth mile below Highway Bridge on U. S. 278

Date September 3, 1959

Collected: Poison, Seine, ~~Draining~~, Electricity.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	ROCK BASS		YELLOW BULLHEAD		BLACKTAIL REDHORSE		SPOTTED SUCKER		LOGPERCH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	4	0.01								
2	8	0.06							2	Trace
3	7	0.10			2	0.02			8	0.05
4	3	0.10	1	0.03					3	0.01
5	2	0.20								
6			1	0.10	3	0.25				
7							3	0.3		
8										
9										
10					7	2.70				
11					2	1.10				
12					3	1.80				
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	24	0.47	2	0.13	17	5.87	3	0.3	13	0.06

Notes:

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Sipsey River, West Branch

Location One-fourth mile below Highway Bridge on U. S. 278

Date September 3, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	SUCKERMOUTH MINNOW		NOTROPIS SP. NO. 1		ALABAMA SHINER		NOTROPIS ASPERIFRONS		PERCINA SP. NO. 1	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			3	Trace						
2	1	Trace	8	0.03	20	0.04	1	Trace	3	Trace
3	5	0.02								
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	6	0.02	11	0.03	20	0.04	1	Trace	3	Trace

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Sipsey River, West Branch

Location One-fourth mile below Highway Bridge on U. S. 278

Date September 3, 1959

Collected: Poison, ~~Seino~~, ~~Draining~~, ~~Electricity~~.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	<u>PERCINA SP.</u> NO. 2		<u>ETHEOSTOMA SP.</u> NO. 1							
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			2	Trace						
2	7	Trace	9	0.02						
3			3	0.01						
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
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18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	7	Trace	14	0.03						

Notes:

SIPSEY RIVER

WEST BRANCH

BELOW AREA 1

Date September 3, 1959

Area Below Area 1

INCH GROUP	CHANNEL CATFISH		FLATHEAD CATFISH		SPOTTED BASS		ROCK BASS		BLUEGILL	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1							1	0.01		
2	1	0.004			1	0.004				
3	4	0.02			2	0.01				
4							1	0.06	1	0.1
5							1	0.07	1	0.1
6	3	0.3								
7			1	0.1						
8										
9										
10										
11										
12					1	0.7				
13										
14	1	0.7								
15	1	0.9								
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	10	1.924	1	0.1	4	0.714	3	0.14	2	0.2

Notes:

Area Below Area 1

INCH GROUP	LONGEAR SUNFISH		FRESHWATER DRUM		BLACKTAIL REDHORSE		LOGPERCH		BLACKTAIL SHINER	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2	1	0.01					2	0.01		
3									9	0.1
4	3	0.1					1	0.02	4	0.1
5	2	0.2							1	0.02
6										
7										
8										
9					2	0.6				
10					1	0.5				
11			1	0.6						
12			2	1.3						
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	6	0.31	3	1.9	3	1.1	3	0.03	14	0.22

Notes:

SIPSEY RIVER

WEST BRANCH

ABOVE DAM

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Location WEST BRANCH SIPSEY - Above Dam

Date September 3, 1959

Collected: Poison, ~~Seine~~, ~~Dredging~~, ~~Electricity~~.

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	CHANNEL CATFISH		SPOTTED BASS		REDEYE BASS		CHAIN PICKEREL		BLUEGILL	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1									1	Trace
2			1	Trace	1	1.0				
3			3	0.03					15	0.3
4									41	1.5
5			4	0.2					9	0.3
6	2	0.1								
7							1	0.04	4	0.9
8										
9	1	0.2							1	0.4
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	3	0.3	8	0.23	1	1.0	1	0.04	71	3.4

Notes:

Date September 3, 1959

Area 1 Acre

INCH GROUP	LONGEAR SUNFISH		GREEN SUNFISH		ROCK BASS		WARMOUTH		YELLOW BULLHEAD	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	6	0.01								
2	10	0.1							1	0.01
3	24	0.3	1	0.02						
4	9	0.5			5	0.1	7	0.4		
5			1	0.1	1	0.1	4	0.5		
6										
7										
8									1	0.2
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	49	0.91	2	0.12	6	0.2	11	0.9	2	0.21

Notes:

Date September 3, 1959

Area 1 Acre

INCH GROUP	GOLDEN REDHORSE		SPOTTED SUCKER		LOGPERCH		FUNDULUS		BLACKTAIL SHINER	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2					2	0.01	1	Trace		
3					1	0.01	2	0.01	11	0.1
4					1	0.02			3	0.03
5									19	0.4
6										
7										
8										
9										
10										
11			1	0.6						
12										
13										
14										
15	1	1.3								
16										
17	1	1.7								
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	3.0	1	0.6	4	0.04	3	0.01	33	0.53

Notes:

SIPSEY RIVER

WEST BRANCH

BELOW DAM

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Location West Branch-Sipsey River-Below Dam

Date September 3, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area _____

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	CHANNEL CATFISH		FLATHEAD CATFISH		DRUM		REDEYE BASS		SPOTTED BASS	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2	3	0.01					2	0.01	2	0.01
3	51	0.5					3	0.02	9	0.03
4	19	0.4	1	0.02			3	0.1	2	0.04
5	1	0.02					1	0.04	2	0.1
6	2	0.20								
7	9	0.7	1	0.1					1	0.2
8									1	0.2
9			3	0.7					1	0.3
10							1	0.5		
11	2	0.5							1	0.5
12	1	0.5			1	0.7				
13									1	0.8
14	1	0.7								
15					2	3.2				
16									1	2.1
17	1	1.3	1	2.0						
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
33			1	18.4						
TOTAL	90	4.83	7	21.22	3	3.9	10	0.67	21	4.28

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Location West Branch-Sipsey River-Below Dam

Date September 3, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area _____

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLUEGILL		ROCK BASS		LONGEAR SUNFISH		GREEN SUNFISH		GOLDEN REDHORSE	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2			2	0.01	1	0.01				
3	2	0.03			5	0.1				
4	7	0.20	7	0.3	11	0.4				
5			5	0.5			2	0.2		
6	1	0.1	1	0.2						
7										
8										
9										
10										
11										
12									1	0.5
13									1	0.8
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	10	0.33	15	1.01	17	0.51	2	0.2	2	1.3

Notes:

Date September 3, 1959

Area _____

INCH GROUP	BLACKTAIL RESHORSE		HOGNOSE SUCKER		MADTOM		LOGPERCH		FUNDULUS	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1									3	0.003
2					1	0.003	6	0.02	8	0.02
3							7	0.04	1	0.001
4										
5			3	0.13			1	0.03		
6										
7										
8										
9										
10										
11	1	0.5								
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	1	0.5	3	0.13	1	0.003	14	0.09	12	0.02

Notes:

Date September 3, 1959

Area _____

INCH GROUP	BLACKTAIL SHINER		DARTER		~~EEL~~					
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2			6	0.02						
3			1	0.01						
4	3	0.1	1	0.02						
5										
6										
7										
8										
9										
10										
11					1	0.1				
12										
13										
14					1	0.2				
15					1	0.2				
16										
17										
18					1	0.4				
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	3	0.1	8	0.05	4	0.9				

Notes:

SIPSEY RIVER

WEST BRANCH

FURTHER BELOW DAM

Date **September 3, 1959**

(Fish largely killed by KMnO_4)

Area _____

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	CHANNEL CATFISH		FLATHEAD CATFISH		SPOTTED BASS		LONGEAR		GOLDEN REDHORSE	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2										
3	2	0.03			2	0.02				
4					1	0.02	1	0.1		
5							1	0.1		
6					2	0.2				
7	1	0.2								
8										
9										
10									1	0.3
11	1	0.3								
12			1	0.7						
13	1	0.5								
14										
15	1	1.1	1	1.3						
16			1	1.4						
17										
18			1	2.1						
19										
20										
21			1	3.7						
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	6	2.13	5	9.2	5	0.24	2	0.2	1	0.3

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Location West Branch-Sipsey River-Further below Dam Date September 3, 1959

Collected: Poison, Seine, Draining, Electricity. Area _____

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLACKTAIL SHINER									
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2	2	0.004								
3	6	0.1								
4	3	0.1								
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	11	0.2								

Notes:

SIPSEY RIVER

BRUSHY FORK

Date September 3, 1959

Area 0.5 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	CHANNEL CATFISH		FLATHEAD CATFISH		DRUM		SPOTTED BASS		REDEYE BASS	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2							1	Trace	2	Trace
3	1	0.01					3	0.02		
4										
5							1	0.04	2	0.09
6	1	0.10	1	0.1						
7	2	0.14								
8										
9	2	0.40								
10										
11										
12	1	0.50								
13					1	0.9				
14							1	1.2		
15	1	1.00								
16	1	1.20			1	1.6				
17										
18	3	4.60								
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	12	7.95	1	0.1	2	2.5	6	1.26	4	0.09

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Location Sipsey River-Brushy Fork

Date September 3, 1959

Collected: Poison, Seine, Draining, Electricity

Area 0.5 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLUEGILL		ROCK BASS		LONGEAR SUNFISH		GREEN SUNFISH		WARMOUTH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			1	TRACE						
2			1	0.01	3	0.02	2	Trace		
3	1	0.02	4	0.10	12	0.15	4	0.07	1	0.02
4			2	0.10	3	0.11	3	0.10		
5			1	0.10	1	0.06	4	0.30	1	0.15
6	1	0.20	1	0.10			1	0.18		
7							1	0.20		
8							1	0.38		
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	0.22	10	.41	19	0.34	16	1.23	2	0.17

Notes:

Date September 3, 1959

Area 0.5 Acre

INCH GROUP	YELLOW BULLHEAD		BLACKTAIL REDHORSE SUCKER		GOLDEN REDHORSE SUCKER		SPOTTED SUCKER		GULF COAST MADTOM	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	1	Trace								
2	1	Trace							4	0.13
3	1	0.01								
4	1	0.02			3	0.08				
5										
6			1	0.05						
7	1	0.11			5	0.7				
8					5	0.9				
9					1	0.3				
10					4	1.5	1	0.4		
11					2	0.8				
12					1	0.8				
13										
14					1	0.9	1	1.2		
15					1	1.0				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	6	0.14	1	0.05	23	6.98	2	1.6	4	0.13

Notes:

Area 0.5 Acre

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Location Sipsey River-Brushy Fork

Date September 3, 1959

Collected: Poison, Seine, Draining, Electricity

Area 0.5 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	MEL									
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15	1	0.2								
16										
17										
18										
19										
20										
21	1	0.5								
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	0.7								

Notes:

WARRIOR RIVER
MULBERRY BRANCH
SOUTHWEST OF GARDEN CITY

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLUE CATFISH		CHANNEL CATFISH		FRESHWATER DRUM		LARGEMOUTH BASS		LONGNOSE GAR	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2			40	0.02						
3			72	0.50			3	0.05		
4			9	0.20			14	0.40		
5			111	3.30			3	0.20		
6	2	0.2	88	4.40	8	0.8	5	0.60		
7	2	0.2	37	2.90	22	2.9				
8			10	1.20	1	0.2			2	0.08
9			2	0.40						
10			15	3.60					1	0.10
11			11	3.30	1	0.6	1	0.70	1	0.10
12			4	1.80	4	3.3				
13			4	2.40	4	4.0			9	1.30
14			3	2.10	6	8.1				
15	2	1.9	1	0.90	3	4.9				
16	2	2.7	1	1.10	2	4.1				
17	2	3.0	2	2.80	1	2.3				
18	1	1.4	4	6.80	1	3.0				
19			4	8.20						
20			2	4.90					1	0.5
21			2	6.60					1	0.6
22			1	3.10						
23									1	0.9
24										
25										
26										
27									1	216
28									1	2.8
29										
30										
31									1	2.1
35									1	3.3
36									1	3.5
TOTAL	11	9.4	423	60.5	53	34.2	26	1.95	21	17.9

Area 1 Acre

Notes:

Area 1 Acre

Notes:

Area 1 Acre

Notes:

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	FUNDULUS		LOGPERCH		<u>PERCINA SP.</u>		BLACKTAIL SHINER			
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	1	Trace					13	.01		
2	5	0.01					10	.02		
3	1	0.01			3	0.02	22	.20		
4					4	0.07	6	.10		
5			1	0.05						
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	7	0.02	1	0.05	7	0.09	51	0.33		

Notes:

WARRIOR RIVER

LOCUST FORK

Date September 4, 1959

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	CHANNEL CATFISH		FLATHEAD CATFISH		LARGEMOUTH BASS		SPOTTED BASS		REDEYE BASS	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	1	Trace								
2	31	0.1					1	Trace	2	0.01
3	21	0.2							3	0.02
4	11	0.2								
5	76	2.4								
6	32	1.5			2	0.3			1	0.07
7	2	0.2	1	0.1						
8	35	4.6	2	0.3						
9	63	10.6	1	0.3						
10	25	6.5			1	0.5				
11	7	2.2								
12										
13										
14	1	0.9								
15										
16										
17										
18	1	1.6								
19	1	2.1								
20										
21										
22	1	4.5								
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	308	37.6	4	0.7	3	0.8	1	Trace	6	0.10

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Location Warrior River-Locust Fork

Date September 4, 1959

Collected: Poison, Seine, Draining, Electricity

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLUEGILL		GREEN SUNFISH		LONGEAR SUNFISH		WARMOUTH		BLACK BULLHEAD	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	4	0.01	9	.006			1	Trace		
2	1	0.01	16	.007	6	0.01				
3	1	0.02	30	.020	2	0.05			1	0.01
4	10	0.40	32	.400	6	0.20				
5	2	0.20	6	.200						
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	18	0.64	83	1.94	14	0.26	1	Trace	1	0.01

Notes:

Date September 4, 1959

Area 1 Acre

INCH GROUP	CARP		SPOTTED SUCKER		BLACKTAIL REDHORSE		GOLDEN REDHORSE		LOGPERCH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2										
3					3	0.02			1	0.01
4					3	0.10	4	0.09	1	0.01
5							1	0.03	2	0.05
6					17	2.80				
7			1	0.2	7	1.40	1	0.15		
8			1	0.2	1	0.20				
9			7	1.9						
10			11	4.2	2	0.80				
11			1	0.6						
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	1	5.7								
24										
25										
26										
27										
28										
29										
30										
TOTAL	1	5.7	21	7.1	33	5.32	6	0.27	4	0.07

Notes:

Date September 4, 1959

Area 1 Acre

INCH GROUP	STONEROLLER		SILVERSTRIPE SHINER		BLACKTAIL SHINER		GAMBUSIA		GOLDFISH	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			8	Trace	7	Trace	1	Trace		
2			75	0.22	84	0.3				
3	1	0.01	24	0.14	118	0.8				
4					7	0.1				
5	1	0.07								
6										
7										
8										
9									1	0.7
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	0.08	107	0.36	216	1.2	1	Trace	1	0.7

Notes:

Date September 4, 1959

Area 1 Acre

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	NOTROPIS SP. NO. 1		CREEK CHUB		CREEK CHUBSUCKER					
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	68	0.1								
2	25	0.1	1	Trace						
3	35	0.25								
4	2	0.04								
5					1	0.06				
6					1	0.07				
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	130	0.49	1	Trace	2	0.13				

Notes:

CHOCOLOCCO CREEK

FISH POPULATION SURVEYS OF CHOCCOLOCCO CREEK

Surveys were made in Choccolocco Creek below Anniston, Alabama, to determine changes in the fish populations following activation of the Anniston sewage disposal plant. A survey was made in September, 1957, while the area was still polluted; the disposal plant was placed in operation in 1957 and 1958, and the second survey conducted in July, 1959.

The first survey station was at Rushing Springs, the second, APHS 75, was east of the Eastaboga-Talladega Highway and the third, APHS 70, was below the Anniston-Talladega Highway. A summary of the results of the surveys is given below:

Area	Year	Fish Pounds Per Acre	F/C	A _T
Rushing Springs	1957	76.0	2.4	82.2
Rushing Springs	1959	45.8	3.5	77.3
APHS 75	1957	12.4	—	37.2
APHS 75	1959	68.0	23.3	8.2
APHS 70	1957	0.0	—	—
APHS 70	1959	0.4	—	—

Station APHS 70 was farthest upstream and below the outfall of the sewage disposal plant. In 1957, no fish were in the area. In 1959, there were still very few fish in the area. The water appeared less polluted than in 1957. The E values of principal species in 1959 present were:

golden shiners	70.7
green sunfish	26.9

The next station, APHS 70, was approximately ten miles downstream. In 1957, only 12.4 pounds fish per acre was recovered, while in 1959, this had increased to 68 pounds per acre. No predatory fishes were present in 1957; chain pickerel and black crappie were present in limited numbers in 1959, giving an F/C ratio of 23.3. This, with A_T of 8.2, indicated an unbalanced population. The E values of the principal species were:

	<u>1959</u>		<u>1957</u>
Goldfish	77.5	Bluegill	32.2
Minnows	17.4	Shellcracker	4.8
All game fishes	4.2	Green sunfish	0.3

Water temperature of the stream was 78° F in mid-summer, indicating that this creek may not warm sufficiently to allow spawning of many warmwater species in this area.

The Rushing Springs area was approximately ten miles further downstream. Here, the pounds fish per acre dropped from 76 in 1957, to 45.8 in 1959. The cause is unknown, but could possibly be because sewage had been removed, decreasing the fertility of the area. The population was in satisfactory condition, with F/C = 3.5 and A_T of 77.3. The E values of the three principal species were:

	<u>1959</u>		<u>1957</u>
Channel catfish	60.7	Channel catfish	46.3
Flathead catfish	4.5	Flathead catfish	11.6
Bluegill	7.5	Drum	6.4
All game fishes	10.3	All game fishes	19.8

Details follow for the three sample areas, with pie-graphs showing the principal species and with harvestable fishes indicated by the shaded areas.

Choccolocco Creek, Rushing Springs

Sample No. 1

August 4, 1959

This 0.6-acre sample area had an average depth of 5 feet and a maximum depth of 8 feet. Ten pints of Noxfish was applied at 9:00 A. M.

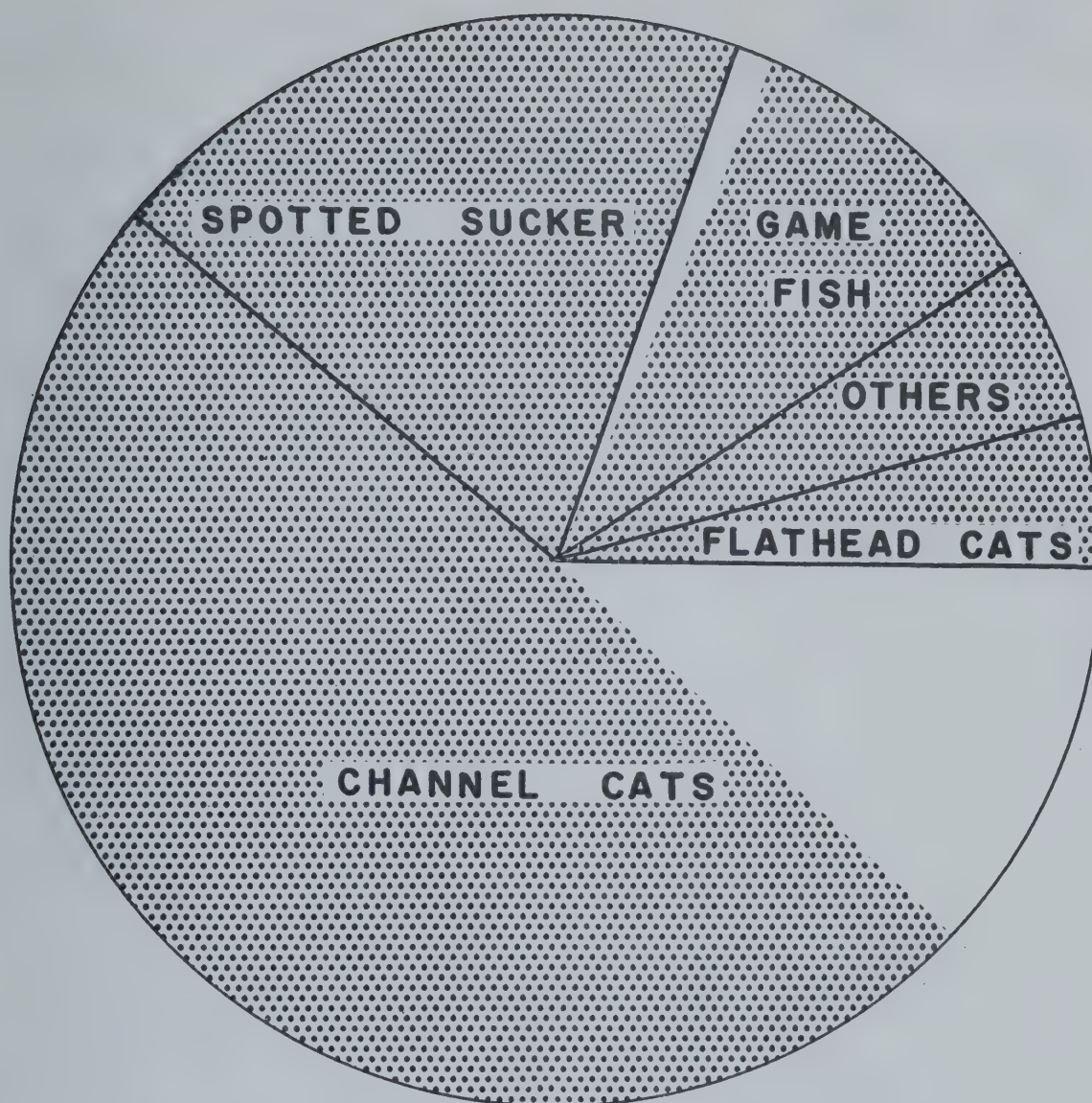
Total weight of fish = 27.4 pounds

F/C = 3.5

Δ_T = 77.3

T Values:

Channel catfish	60.7	Stoneroller	0.2
Flathead catfish	4.5	Coldfish	0.7
Spotted bass	1.0	Blacktail shiner	0.1
Bluegill	7.5	Mimic shiner	0.6
Redear sunfish	1.8	Emerald shiner	1.4
Yellow bullhead	1.7	Blackchin shiner	0.3
Spotted sucker	19.3	Other	<u>0.2</u>
		Total	100.0



CHOCOLOCCO CREEK, RUSHING SPRINGS

SAMPLE NO. 1

Choccolocco Creek, Smith Gin Place

Sample No. 2

August 4, 1959

This 0.5-acre sample had an average depth of 3 feet. Six pints of Noxfish was applied at 2:00 P. M. Permanganate was added below the riffle on the downstream end of the sample area.

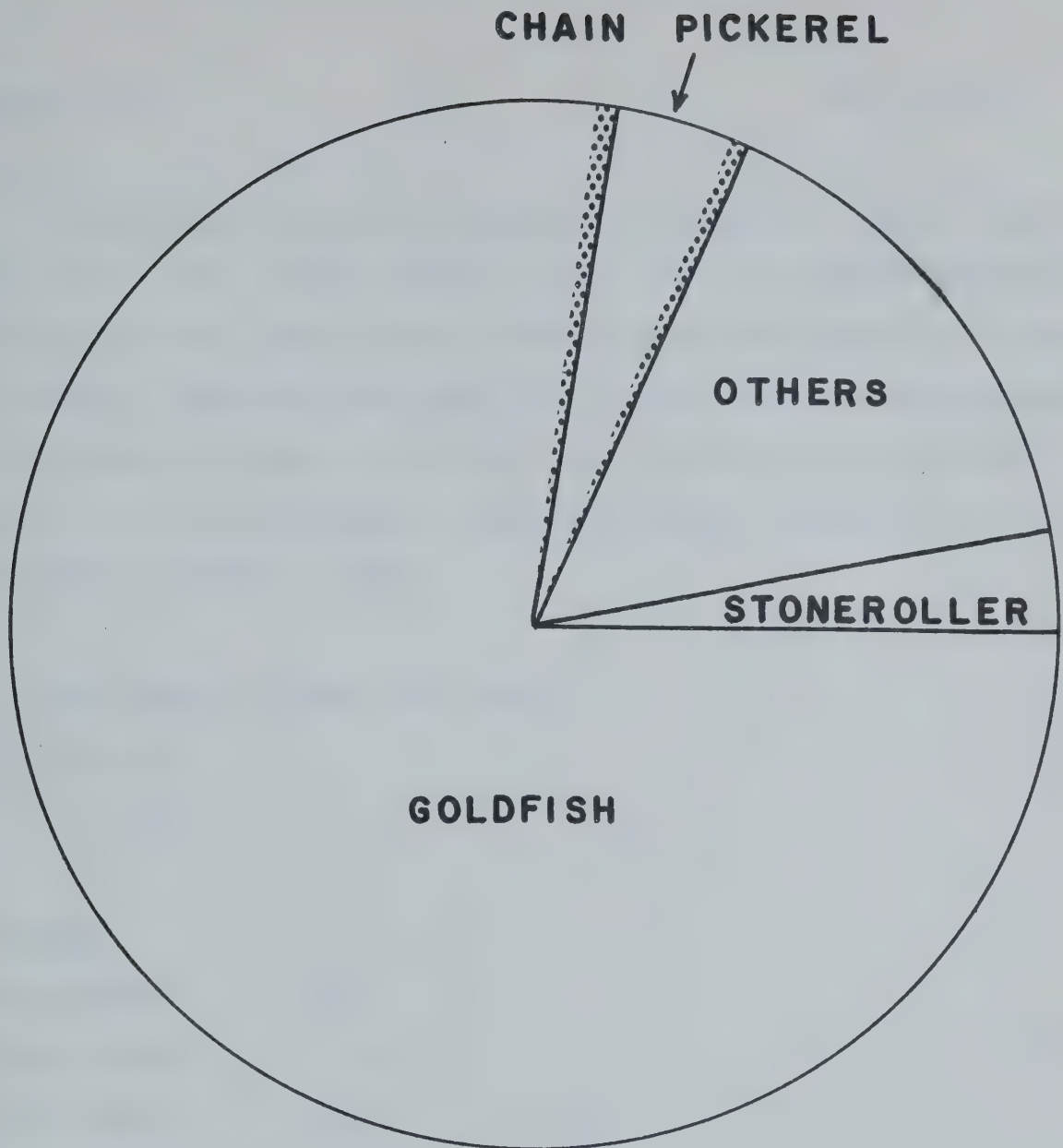
Total weight of fish = 34.0 pounds

F/C = 23.3

A_T = 8.2

E Values:

Black crappie	0.1
Chain pickerel	4.1
<u>Catostomus sp.</u>	1.0
Goldfish	77.5
Stoneroller	3.0
Silverstripe shiner	6.4
Mimic shiner	3.2
Common shiner	3.8
Blacktail shiner	<u>1.0</u>
Total	100.1



CHOCOLOCCO CREEK, NEAR SMITH'S GIN

SAMPLE NO. 2

Choccolocco Creek, A. P. H. Station 70

Sample No. 3

July 24, 1959

Visibility in this area was approximately 14 inches. The area sampled was 0.7 acre with a maximum depth of 4 feet. The area extended completely across the creek. Twelve pounds of Noxfish was used to treat the area and 30 pounds of potassium permanganate were applied across the downstream edge of the sample area when it was evident that the Noxfish had reached that point. The overall appearance of the area indicated less pollution than was observed on September 5, 1957.

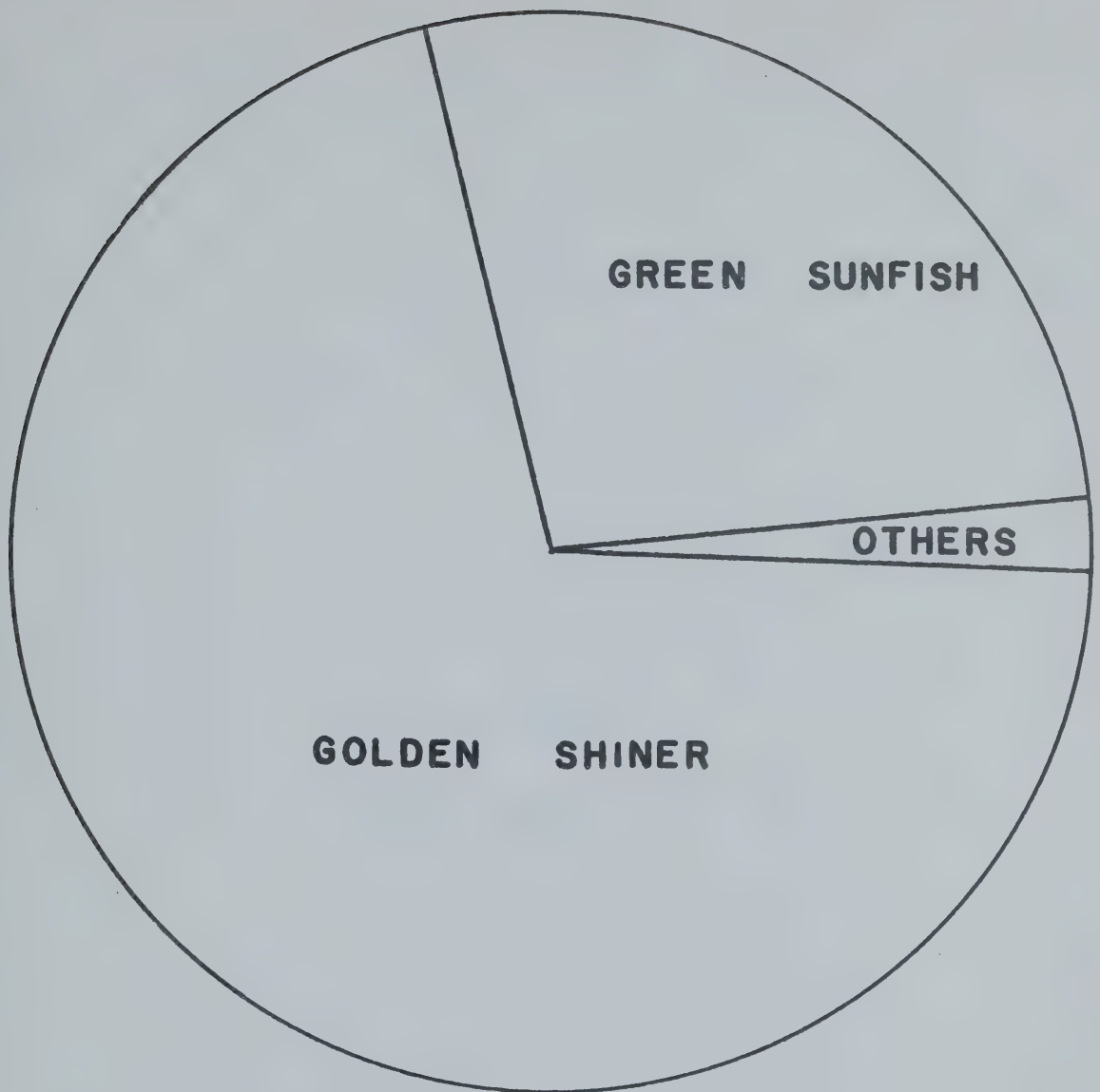
Total weight of fish = 0.26 pounds

$F/C = 0.0$

$A_T = 0.0$

E Values:

Green sunfish	26.9
Yellow bullhead	0.2
Golden shiner	70.7
Pugnose minnow	1.8
Gambusia	<u>0.1</u>
Total	99.8



CHOCOLOCCO CREEK, A. P. H. STATION 70

SAMPLE NO. 3

CHOCOLOCCO CREEK

RUSHING SPRINGS

Collected: Poison, ~~Seino, Draining, Electricity~~ Area 0.6 Acres

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	CHANNEL CATFISH		FLATHEAD CATFISH		SPOTTED BASS		BLUEGILL		LONGEAR	SUNFISH
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	5	Trace							6	Trace
2	93	0.16			4	0.01			1	Trace
3	2	0.01			31	0.26	1	0.02		
4			1	0.03						
5	2	Trace	5	0.2						
6	7	Trace	5	0.4						
7	9	0.9					1	0.2		
8	6	0.85					2	1.15		
9	7	1.4	1	0.2			1	0.7		
10	4	1.3								
11	4	1.5	1	0.4						
12	5	2.6								
13										
14										
15	2	2.1								
16	2	2.8								
17	2	3.0								
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	150	16.62	13	1.23	35	0.27	5	2.07	7	Trace

Notes:

Area 0.6 Acres

Notes:

A.P.I. FARM PONDS

FISH POPULATION SUMMARY

Location Chocolocco Creek, Rushing Springs

Date August 4, 1959

Collected: Poison, ~~Seine~~, ~~Draining~~, ~~Electricity~~.

Area 0.6 Acres

NUMBER AND WEIGHT OF EACH SPECIES

INCH GROUP	BLACKTAIL SHINER		MIMIC SHINER		COMMON SHINER		EMERALD SHINER		GAMBUSIA	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1			6	Trace	2	0.01	89	0.07		
2	1	Trace	44	0.13			202	0.30	1	Trace
3	5	0.02	8	0.04						
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	6	0.02	58	0.17	2	0.01	291	0.37	1	Trace

Notes:

Area 0.6 Acres

INCH GROUP	BLACKCHIN SHINER									
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2	42	0.91								
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	42	0.91								

Notes:

CHOCOLOCCO CREEK

SMITH GIN PLACE

Date August 4, 1959

Area 0.5 Acre

INCH GROUP	BLACK CRAPPIE		CHAIN PICKEREL		<u>CASTOSTOMUS SP.</u>		GOLDFISH		STONEROLLER	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1							67	0.08		
2							171	0.60	9	0.03
3							105	2.30	21	0.22
4							49	2.10	22	0.55
5							26	2.60	4	0.21
6	1	0.02					33	5.40		
7							24	6.60		
8							13	4.80		
9										
10					1	0.35	1	0.80		
11							1	1.10		
12										
13			1	0.50						
14			1	0.90						
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	1	0.02	2	1.40	1	0.35	490	26.38	56	1.01

Notes:

Date August 4, 1959

Area 0.5 Acre

INCH GROUP	GOLDEN SHINER		SILVERSTRIPE SHINER		MIMIC SHINER		COMMON SHINER		BLACKTAIL SHINER	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1										
2	1	Trace	161	0.57	467	1.04			21	0.06
3	1	Trace	336	1.61	11	0.05			23	0.18
4							15	0.45	5	0.09
5							12	0.75		
6							1	0.08		
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	2	Trace	497	2.18	478	1.09	28	1.28	49	0.33

Notes:

CHOCOLOCCO CREEK

APH STATION 70

Date July 24, 1959

Area 0.7 Acre

INCH GROUP	GREEN SUNFISH		YELLOW BULLHEAD		GOLDEN SHINER		PUGNOSE MINNOW		GAMBUSIA	
	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS	NO.	POUNDS
1	22	.03	5	Trace	3	Trace			2	Trace
2	13	.04			34	.09				
3					11	.10	1	Trace		
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
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17										
18										
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21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
TOTAL	35	0.07	5	Trace	48	0.19	1	Trace	2	Trace

Notes:

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